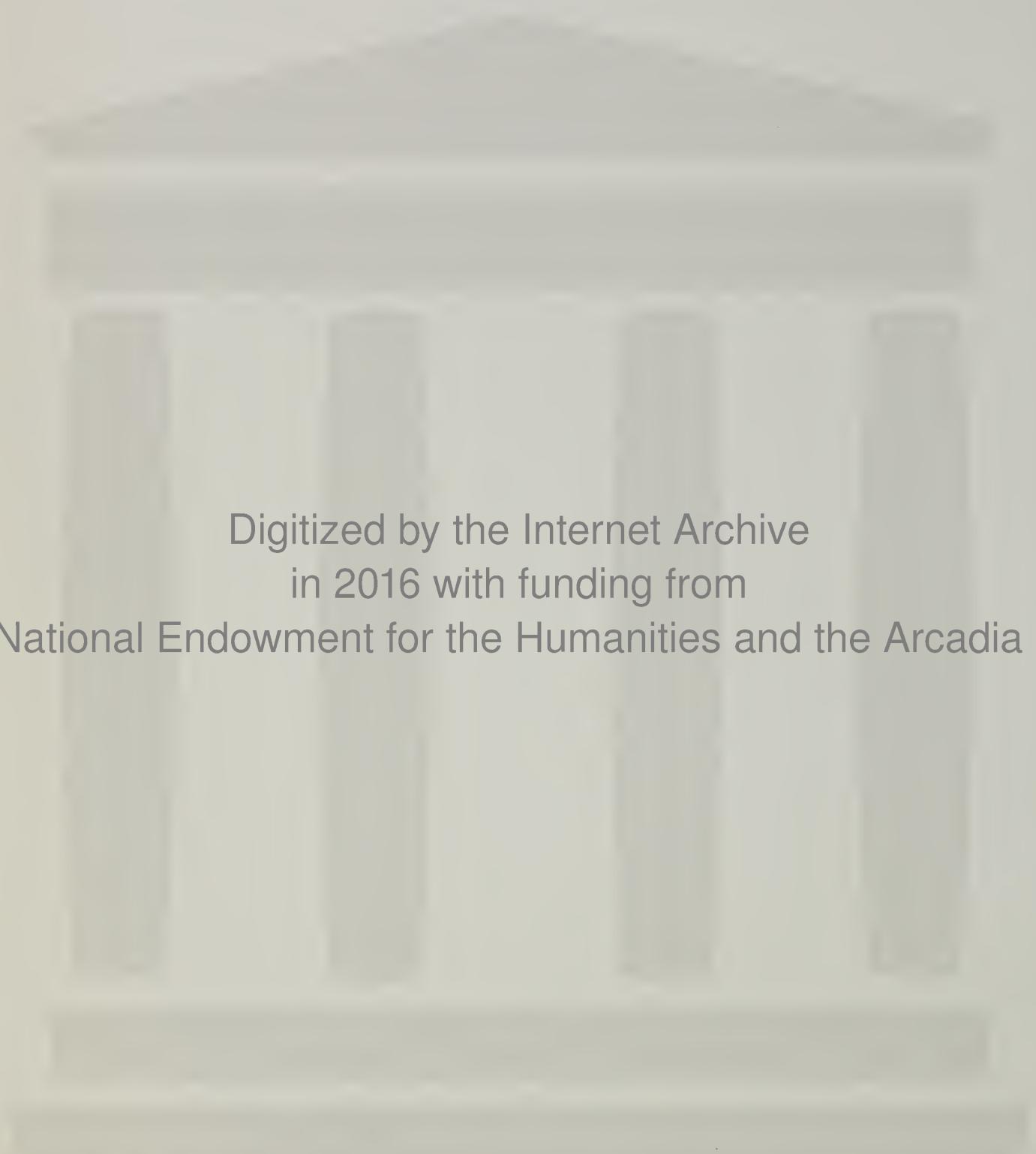


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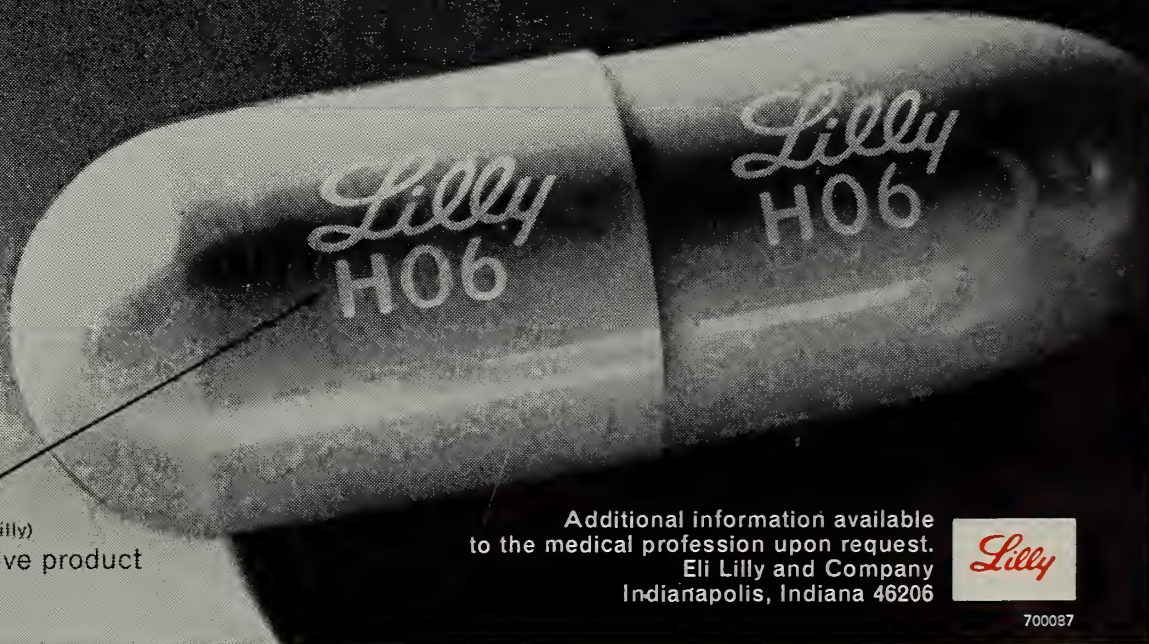
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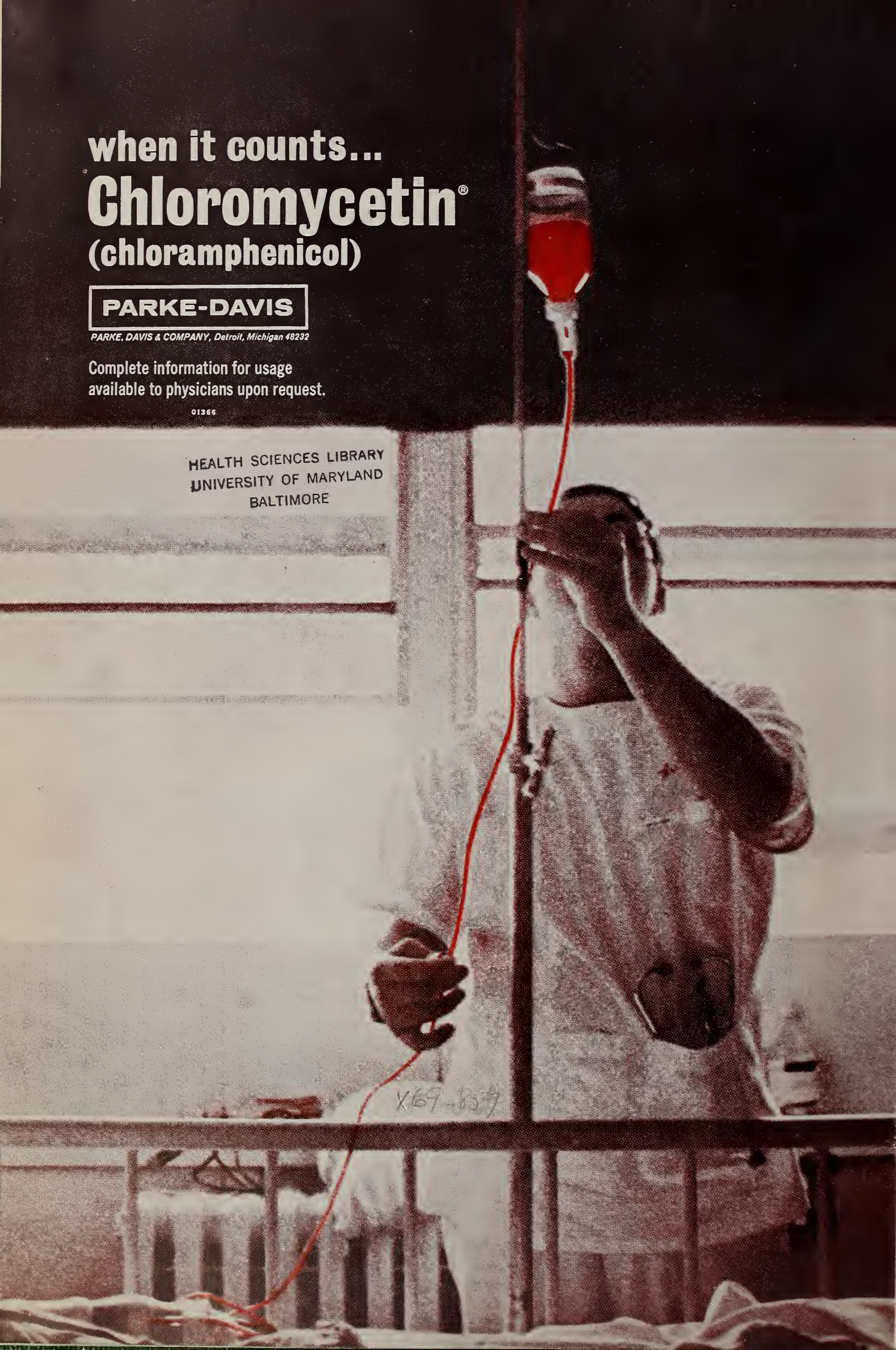
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THE SOUTH DAKOTA
JOURNAL OF MEDICINE

JOURNAL OF THE SOUTH DAKOTA STATE MEDICAL ASSOCIATION
AND THE SIOUX VALLEY MEDICAL ASSOCIATION

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CLINICOPATHOLOGICAL CONFERENCE — SIOUX VALLEY HOSPITAL

From the Intern and Resident Teaching Conferences of the Sioux Valley Hospital, Sioux Falls

JOHN F. BARLOW, M.D.*

Pathologist — Editor



WARREN L. JONES, M.D.**

Internist — Discussor

This 30-year old Caucasian female first became aware of an abnormality of her heart fourteen months prior to the final admission. At this time she received a report of a chest x-ray taken by the State Department of Health six months previously. Large pulmonary arteries and questionable cardiovascular disease were described. She had mild dyspnea and dizziness but no orthopnea, paroxysmal nocturnal disease, chest pain, ankle edema, or history of rheumatic fever. There was no family history of heart disease.

On the first visit to the clinic the patient was a well-developed, well-nourished, somewhat pale, Caucasian female without noticeable cyanosis. Blood pressure, pulse, and temperature were normal. There was a Grade I systolic murmur and a narrow split of the second sound with most marked prominence of the pulmonic component. There were no rales, ankle edema, or other signs of heart failure. There was no calf tenderness or swelling. There was no clubbing of the fingers or toes.

An x-ray showed cardiomegaly which was first thought to be left ventricular hypertrophy. However, cardiac fluoroscopy showed the enlargement was of the right ventricle and all the other chambers of the heart appeared normal. The lung fields were clear.

The patient was sent elsewhere for cardiac catheterization which was done six months prior to death. Laboratory data revealed a normal skull x-ray, intravenous pyelogram, electroencephalogram, complete blood count, erythrocyte sedimentation rate, urinalysis, blood urea

nitrogen, fasting blood sugar, LE clot test, serum electrolytes, serum proteins, serology, PSP, and latex fixation. The PBI was 1.3 ug% (normal 4-8 ug%) and the T_3 was 33.8% (normal 24-36%). There were no signs or symptoms of hypothyroidism or hyperthyroidism. An electrocardiogram showed an early right ventricular hypertrophy pattern. Repeat fluoroscopy tests showed enlargement of the right ventricle with marked enlargement of the proximal pulmonary segment and considerable clearness of the peripheral lung fields. A Papanicolaou smear showed suspicious cells and subsequent biopsies indicated an invasive squamous cell carcinoma. The patient was treated with digitoxin and given 5000 milligram hours of radium + 3115 tissue roentgens of external irradiation to the pelvis over 20 days. The only complication of the radiation treatment was leukopenia which was as low as 2150/ Cu^3 . These counts later returned to normal.

The cardiac catheterization data were interpreted as follows:

1. Markedly elevated total pulmonary and pulmonary arteriolar resistances with normal pulmonary wedge pressure.
2. Subnormal cardiac output at rest.
3. Moderate tricuspid insufficiency with right ventricular failure and a small right to left shunt via valve competent foramen ovale.

Subsequent to cardiac catheterization the patient was hospitalized four months prior to the final admission for a perirectal abscess which promptly responded to surgical drainage. Two months prior to admission she was seen because of early pneumonia in the left lower lobe.

She was seen on the day of final admission in the emergency room because of severe pain in the anterior chest which was aggravated by respiration and became more severe in the hour or two just prior to admission. She was not coughing frequently but each cough was extremely

This case is presented through the courtesy of Drs. Theodore Wrage and Gerald Tracy of the Brown Clinic in Watertown, South Dakota.

*Lecturer in Pathology, School of Medicine, University of South Dakota.

**Clinical Associate Professor of Medicine and Assistant Dean for Clinical Affairs, School of Medicine, University of South Dakota.

painful for her. Admission physical revealed an enlarged heart with rales in the left lower lobe. The patient was mildly cyanotic and slightly dyspneic. After admission, the pain became more severe and the patient became intensely cyanotic. An electrocardiogram showed some changes over the right side of the heart and some digitalis effect. She was placed in an oxygen tent. Abnormal laboratory findings included a white count of 13,000 with 84% polys, 1+ albuminuria, transaminase of 665 units and a blood urea nitrogen of 30 mg.%. The cyanosis and chest pain continued and the liver became enlarged and tender. On the day following admission, however, the patient felt somewhat more comfortable and the transaminase dropped to 400 units. A bilirubin at that time was 2.9 mg.%, chloride 100 meq/L, CO₂ combining power 27.3 meq/L, potassium 5.1 meq/L, sodium 131 meq/L. The oxygen was discontinued and she seemed to be getting on relatively well. However she was found dead in bed three days after admission, shortly after having been seen by visitors.

DR. WARREN L. JONES: The case at hand is a 30-year old white female who first became aware of an abnormality of her heart fourteen months prior to the final admission. Since the sequence of events in this protocol is a bit confusing, reference to the illustration (Figure #1)

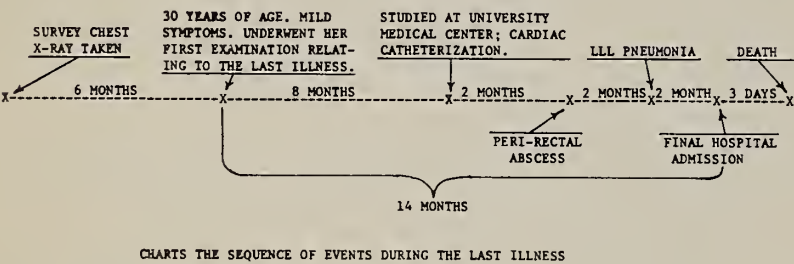


Fig. I

will serve as a guide to the reader. The total period of time from when this patient was seen on initial examination to the time of death is fourteen months, and twenty months from the time of the survey chest x-ray to the time of death. I think this time relationship may be helpful to me in coming to some conclusions. The patient received a report of her chest x-ray taken by the State Department of Health six months previously, and there were reported large pulmonary arteries and questionable cardiovascular disease. At that time she had mild dyspnea and dizziness but no orthopnea, no paroxysmal nocturnal dyspnea, no chest pain, ankle edema, or history of rheumatic fever. There was no family history of heart disease.

At this particular time one might ponder a bit. It is not unusual to see a person at 30 years of age with the first knowledge of a cardiovascular lesion such as one of the rheumatic valvular heart lesions, or a congenital lesion such as an interatrial septal defect or patent ductus arteriosus, which may not manifest symptoms until the patient is of this age.

The physical examination at the time of that clinic visit revealed a well-developed, well-nourished, somewhat pale white female who showed no evidence of cyanosis. The fact that she did not have cyanosis at the time of that examination will help us in the final diagnosis. The blood pressure, pulse, and temperature were normal. There was a Grade I systolic murmur and a narrow split of the second sound over the base of the heart with most marked prominence of the pulmonic component (from the way this was stated, I presume this was a splitting of P-2, or the pulmonic second sound). If my presumption is correct this would mean that the patient had considerable pulmonary hypertension. The splitting of P-2 is of interest. This indicates an assynchrony of the closures of the pulmonic and aortic valves. It is often seen in the presence of pulmonary hypertension. It is a point helpful in the diagnosis in the case of interatrial septal defect in which case the splitting of P-2 is usually a fairly wide split along with a pulmonic systolic blowing murmur. In the case of pulmonary hypertension for any reason we may have a splitting of P-2. In pulmonary hypertension there is, at times, a "click" sound heard some time during systolic ejection, which is thought to be related to the height of the pressure in the pulmonary artery.

Further, on physical examination there were no rales, no ankle edema, no other signs of heart failure, no calf tenderness or swelling. There was no clubbing of the fingers or toes. I think this is an important point. The absence of cyanosis and the absence of clubbing means to us that there was not a congenital cardiovascular lesion with a veno-arterial shunt. Furthermore, if we had a slowly progressing pulmonary disease she should have had clubbing of the digits, but there was none. Further, an x-ray showed cardiomegaly which was first thought to be left ventricular hypertrophy, but subsequently a cardiac fluoroscopic study was performed which showed enlargement of the right ventricle and apparently all of the other chambers of the heart were normal. The lung fields were clear. Dr. McHardy, will you please discuss the x-rays.

DR. B. R. McHARDY*: The most striking thing is the dilatation of the pulmonary artery with normal or slightly reduced vascularity of the peripheral lung fields. (See Figure #2). These findings are characteristic of pulmonic stenosis with poststenotic dilatation of the pulmonary artery. The history and physical, however, do not seem to suggest congenital heart disease.



Fig. II — This chest film was shortly before the patient's death and reveals marked dilatation of the pulmonary artery and clear peripheral lung fields.

DR. JONES: The patient was sent elsewhere for further studies fourteen months after the original chest film and six months before she died. Laboratory data revealed a normal skull x-ray; why this was performed I'm not sure. No mental or neurological symptoms were noted in the protocol. An intravenous pyelogram, electroencephalogram, complete blood count, sed rate, urinalysis, BUN and fasting blood sugar were negative as were a number of other tests. I might point out here that with a normal blood count I think we can state that the patient did not have a secondary polycythemia. The PBI was recorded below the normal range, but the T-3 was within the normal range. Clinically the patient showed no evidence of thyroid disorder so I think that I will dismiss this possibility.

An electrocardiogram showed an early right ventricular hypertrophy pattern. We have two electrocardiograms representing the original examination at the Watertown clinic. One of these is shown in Figure #3. There is a right axis deviation, a vertical cardiac position, some ST and T abnormalities in leads II, III, AVF, and in the chest leads we have a peculiar pattern which I'll mention because it could represent an anteroseptal myocardial infarction.

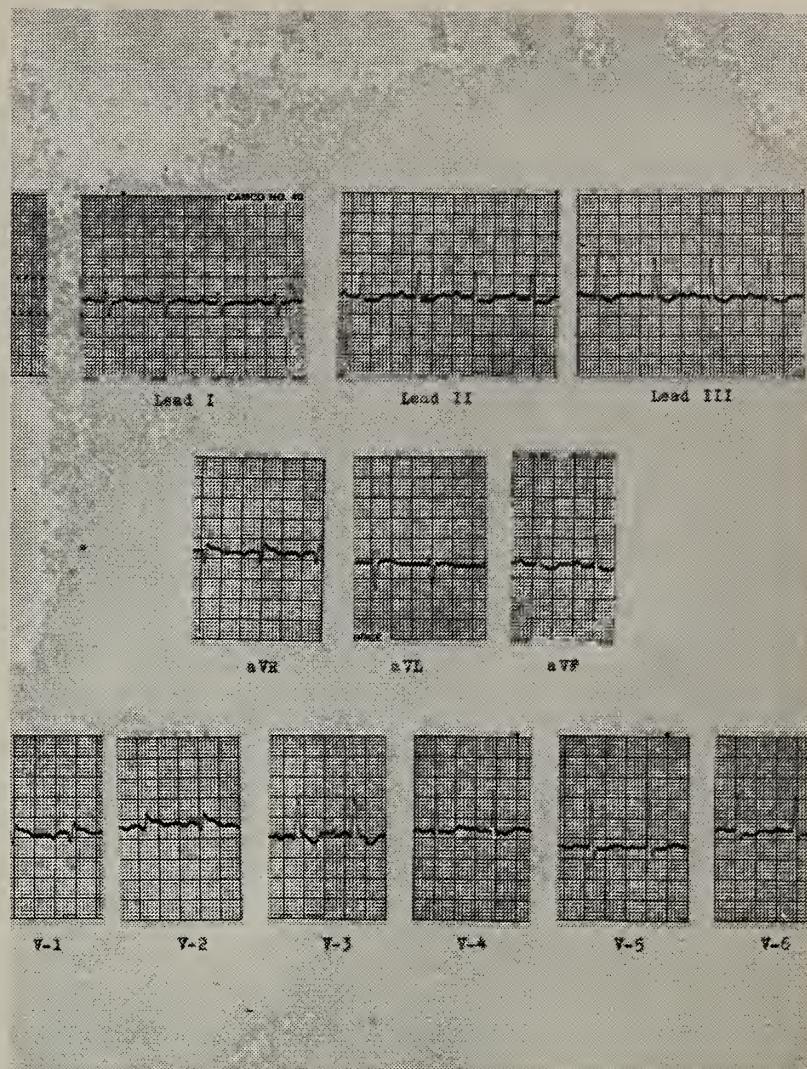


Fig. III — Electrocardiogram (see protocol).

tion. You will notice in lead V-1 an abnormal Q with high take-off of the ST and a diphasic T. V-2 is rather similar with a smaller Q, but it is a broad Q. One cannot help but be just a little uneasy about this type of configuration in leads V-1 and V-2. Now, in a previous CPC I made quite an issue of these particular points but recall in that particular case the ECG showed a horizontal cardiac position, and a left axis deviation, whereas in this patient we have similar findings which could be considered an abnormal Q wave in leads V-1 and V-2, with no abnormal Q waves in any of the limb leads, but in the presence of a right axis deviation and vertical position of the heart. This puts a little bit different light on these particular findings. In this case I am laying no significance to this finding, and regard it as a part of the positional pattern in this electrocardiogram. The presence of a rather prominent right ventricular hypertrophy pattern coincides with our clinical picture up to now.

Fluoroscopic studies of the chest and heart disclosed enlargement of the right ventricle and a marked enlargement of the proximal pulmonary artery segment and considerable clearness of the peripheral lung fields. The reduced vascular markings in the peripheral lung fields is a very helpful point for several reasons. If this

* Attending Radiologist, Sioux Valley Hospital.

patient had an interatrial septal defect or patent ductus arteriosus, we would expect not a decrease of the peripheral lung markings, but excessive pulmonary vascular markings. In fact, under the fluoroscope in either of these conditions we usually see large pulsating hilar shadows which are sometimes referred to as the "hilar dance." Obviously we do not have this particular finding here, and can therefore rule out these congenital lesions.

A Pap smear of the cervix was positive for malignant cells. Cervical biopsies were performed and invasive squamous cell carcinoma was found. The time relationship between this relatively early finding, and the rather advanced pulmonary findings which had already been manifest for eight months does not coincide. Therefore, I cannot directly relate these pulmonary and cervical findings to the same disease process. The patient was given x-ray and radium therapy to the cervix in apparently the usual doses and method. Evidently she showed some congestive heart failure at that time and was digitalized. A leukopenia developed which one might expect. The WBC later returned to normal.

A cardiac catheterization study was performed and the results of this study are outlined in the protocol. The detailed data, however, give us no more information than is presented in the protocol. Several points warrant further discussion:

(1) There was marked elevation of the total pulmonary and pulmonary arteriolar resistances, with a normal pulmonary wedge pressure. The normal pulmonary wedge pressure means that the hypertension is not present in the capillaries or venous side of the pulmonary circulation. This rules out left-sided heart failure as a cause of the pulmonary hypertension. This would also mean to me that the pulmonary hypertension does exist above the pulmonic valve and therefore this could not represent a case of pulmonic valvular stenosis. (2) There was reported a subnormal cardiac output at rest. This point simply means to me that there was sufficient resistance in the pulmonary circuit such that blood flow to the left side of the heart and aorta was diminished. (3) A moderate tricuspid insufficiency with right ventricular failure and a small right to left shunt via a valve competent foramen oval was found. I can find no help in arriving at my diagnosis from these points.

Subsequent to cardiac catheterization the patient was hospitalized four months prior to final

admission for treatment of a perirectal abscess as indicated in Figure #1. This is not unexpected following heavy x-ray therapy. Surgical drainage took place. Two months prior to the final admission she was rehospitalized for treatment of an early pneumonia involving the left lower lobe.

On the day of her final hospital admission she was seen in the emergency room because of severe pain in the anterior chest which was aggravated by breathing and became more severe in the hour or two just prior to admission. There was rather sudden onset of severe symptoms of pleurisy. When pleurisy is present with acute bacterial pneumonia the patient is usually febrile, toxic and ill for 6-8 hours or longer before pleurisy begins. Since pleurisy was an early symptom, and taking into account the preceding events, I'd be most thoughtful of pelvic or femoral phlebothrombosis and embolization with pulmonary infarction causing these symptoms. The admission physical examination revealed an enlarged heart and rales in the left lower lobe which one might expect with pneumonia or infarction. The patient was mildly cyanotic which one might expect under these circumstances, whether due to pneumonia or pulmonary infarction. After admission the pain became more severe and the patient became intensely cyanotic. An electrocardiogram showed some change over the right side of the heart and some digitalis effect. This doesn't help me very much. If indeed the patient had had a pulmonary infarction we would see intensification of the already existing right ventricular hypertrophy. Oxygen therapy was begun. Abnormal laboratory findings included an elevated WBC with some "shift to the left." There was a 1+ proteinuria. The serum transaminase was high, which I suppose was the SGOT. One might have an elevated transaminase level in either acute pneumonia or pulmonary infarction. The BUN was somewhat elevated. Cyanosis and chest pain continued and the liver became enlarged and tender. This means to me that the patient was going into an acute right-sided heart failure, which might occur with either an acute pneumonia or pulmonary infarction.

The day following admission she felt better and presumably had the oft-seen "good before the bad." The serum bilirubin was elevated which helps a little bit to differentiate pulmonary infarction from an acute pneumonia. I think the elevated bilirubin leans towards a pulmonary infarction, since greater breakdown of hemoglobin occurs in pulmonary in-

farction overloading the hepatic cells temporarily, whose function is already reduced by the existing passive congestion. This ought not be seen in acute pneumonia.

The CO₂ combining power was normal, the potassium was elevated, and the sodium was a low normal. Oxygen was discontinued because she was feeling better. After visiting with relatives she was found unexpectedly dead. I would say that she probably died from a second pulmonary embolus from a phlebothrombosis, probably originating in the pelvic veins. I still have not satisfied my thoughts in regard to the primary phases of this illness. We have evidence of there being pulmonary hypertension. We have ruled out several congenital cardiac defects. Rheumatic valvular heart disease seems unlikely and is ruled out. I am faced with the frustrating thoughts of how to relate the pulmonary hypertension to the known invasive carcinoma of the cervix and have pondered this for some time. I really cannot relate them. I think this lady probably had two different diseases or two unrelated disease processes. She had an invasive carcinoma of the cervix, and I think this was probably related to the development of phlebothrombosis of the pelvic veins, leading to the final phase of illness due to pulmonary infarction. In addition she had pulmonary hypertension, and I'm going to hazard a guess that she had the unusual idiopathic pulmonary arteriosclerosis that occurs in youngwomen leading to a rapid, relentless course of illness and death within the length of time witnessed in this case. Now usually polycythemia, cyanosis, and clubbing of the digits are also present. These helpful findings were not present in our case. Although I am not satisfied with this final diagnosis, I have unravelled the facts stated in the protocol as far as I can. Perhaps others here would like to further discuss this case.

DR. JOHN F. BARLOW: Dr. Sanderson, will you please comment on the electrocardiogram.

DR. E. W. SANDERSON*: The electrocardiogram is nonspecific but is compatible with right ventricular strain or hypertrophy, not particularly an infarct pattern. I don't have any idea what is going on in this case. I am suspicious since two or three people have told me there was a very unusual demise. I am afraid pulmonary embolus and infarction are too simple an explanation for this patient. I am concerned about a patent foramen ovale. If there were significant interatrial shunting with left to right

*Internist, Sioux Valley Hospital.

shunt, the patient might have developed pulmonary hypertension. The possibility of right sided endocarditis superimposed on a septal defect or tricuspid valve should be considered as well as diffuse vascular spread of a carcinoma of the cervix.

DR. WARREN L. JONES: Dr. Stahmann, what do you think about the carcinoma of the cervix?

DR. F. S. STAHMANN**: There is not much to discuss. This sounds like a routine carcinoma of the cervix treated in a routine way. I doubt diffuse spread of the lesion.

DR. WARREN JONES' DIAGNOSES

1. *Primary Pulmonary Hypertension*
2. *Multiple Pulmonary Emboli with Infarction*
3. *Acute Congestion of Liver*
4. *Squamous Cell Carcinoma of the Cervix, Treated*

PATHOLOGIC DISCUSSION

DR. BARLOW: Upon opening the chest the pericardium was distended with 850 cc. of liquid and clotted blood. The source of the tamponade was a longitudinal rent in the main pulmonary artery. Sections about the tear revealed organized fibrous tissue indicating that the tear had taken place over a period of time rather

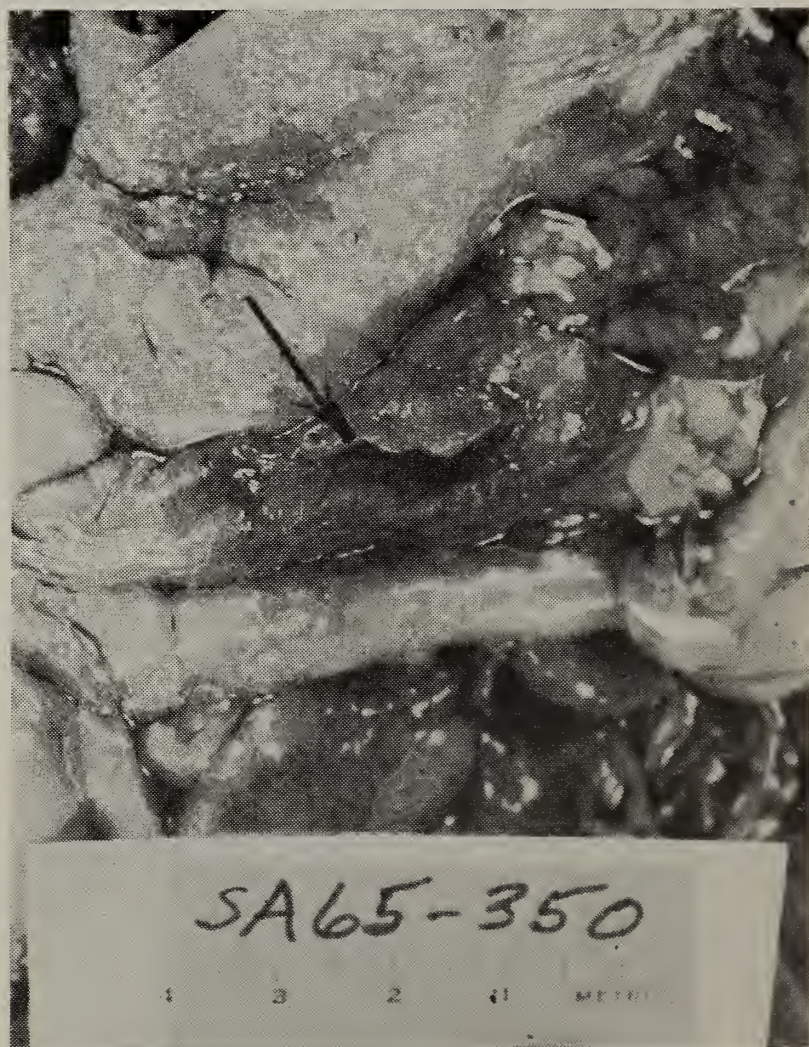


Fig. IV — Large rent in pulmonary artery.

than suddenly. There were areas of cystic medionecrosis of the pulmonary artery media near the tear. These areas were vividly demonstrated on elastic tissue stain.

**Obstetrician and Gynecologist, Sioux Valley Hospital.

In addition the pulmonary artery was hugely dilated below an organizing thrombus. There were no other thrombi in the pulmonary ar-

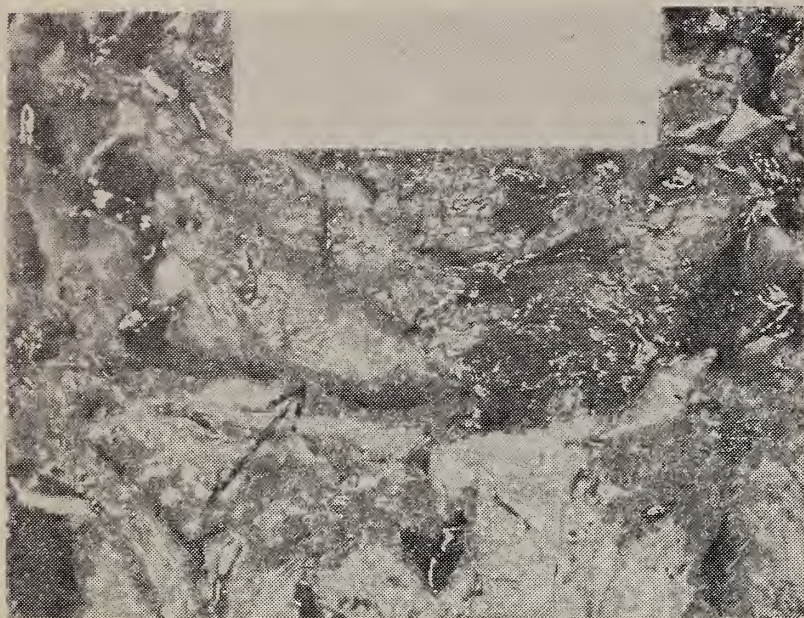


Fig. V — Thrombus in pulmonary artery.

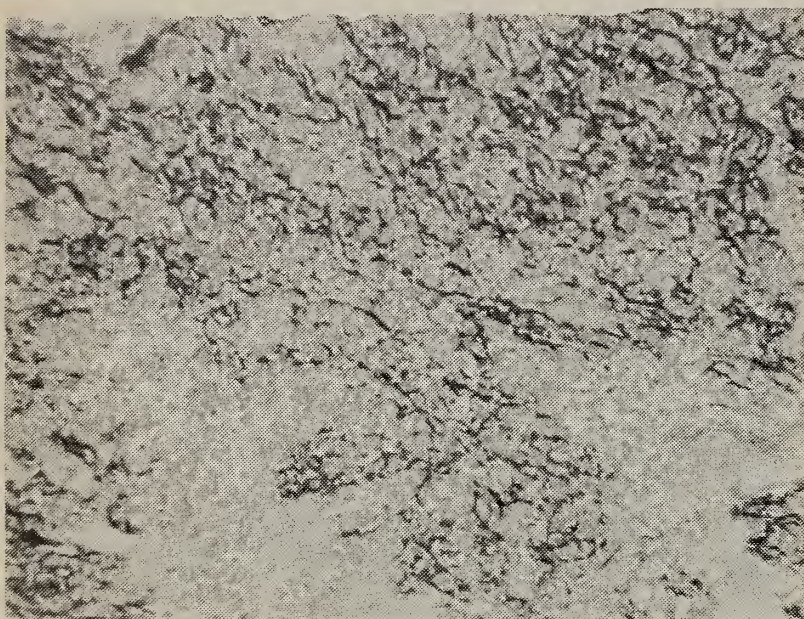


Fig. VI — Cystic changes in wall of pulmonary artery near rupture (elastic tissue stain 100 x).

terial tree or pulmonary webs. All branches of the pulmonary arterial tree were markedly dilated and showed many elevated atherosclerotic plaques.

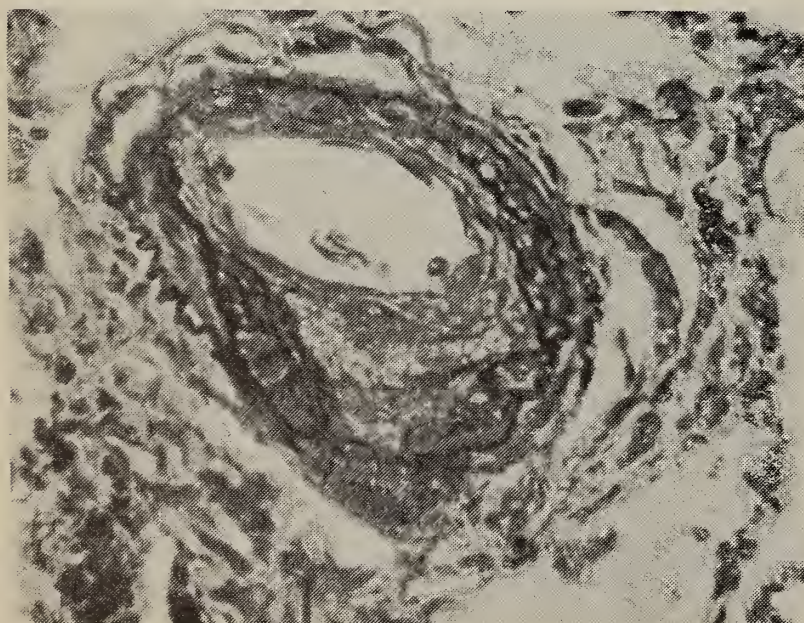


Fig. VII — Thickening of small pulmonary artery (elastic tissue stain 100 x).

Sections of pulmonary parenchyma revealed marked intimal thickening with narrowing of the lumens of the pulmonary arterioles. So-called glomus lesions and angiomatoid lesions as described in severe pulmonary hypertension were also present. There were no lesions in the pulmonary parenchyma.

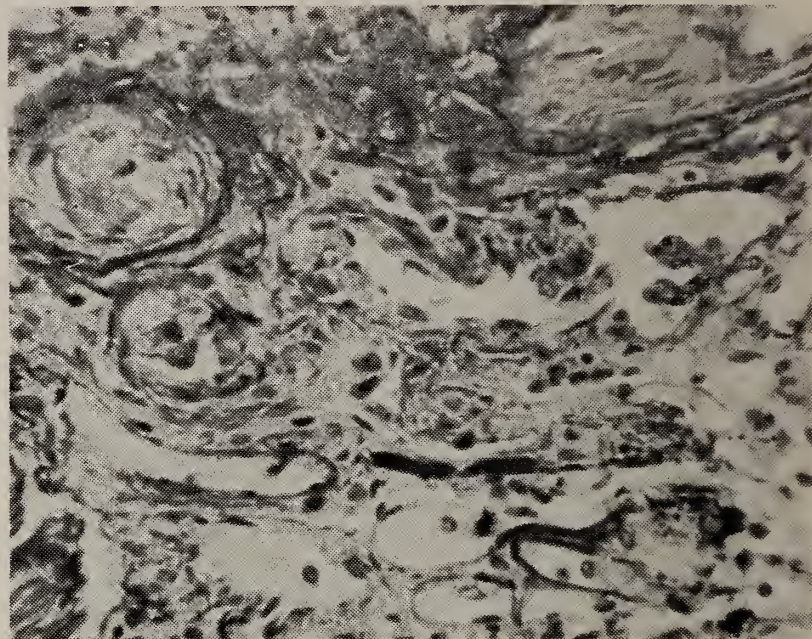


Fig. VIII — Angiomatoid lesion in lung — note thickened vessels and dilated thin-walled vessels.

The heart weighed 450 grams and showed marked right ventricular hypertrophy, the thickness of the right ventricle being 0.9 cm. The valves and left ventricle were normal. There were no congenital heart defects. The cervix showed radiation effect but there was no evidence of residual tumor. No thrombi were found in the pelvic veins or vena cava. The leg veins showed excellent reflux bilaterally. The liver showed severe chronic passive congestion but no evidence of cardiac cirrhosis. The severe congestion explains the elevated bilirubin and transaminase.

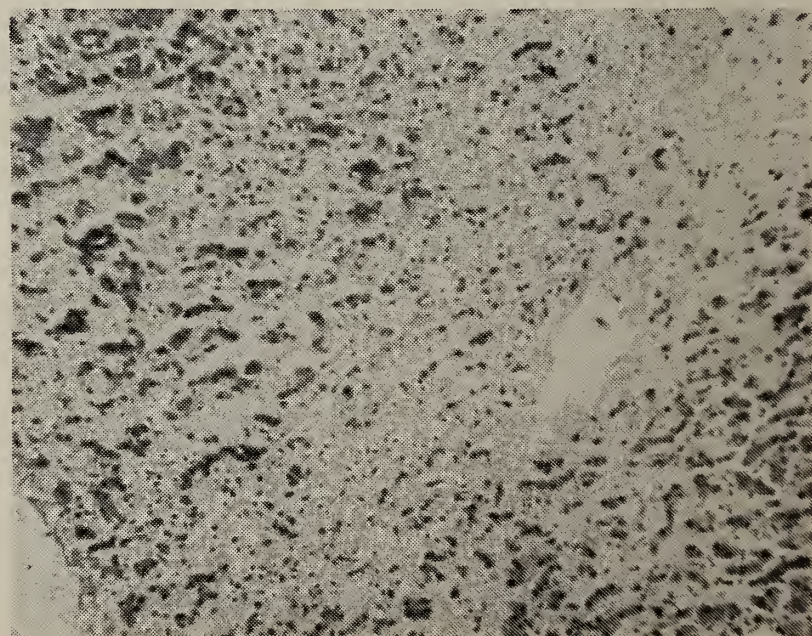


Fig. IX — Severe passive congestion of liver.

This patient had primary pulmonary hypertension, a rare disease of unknown etiology which exists in the absence of significant pulmonary parenchymal or cardiac disorders. 60-90% of the patients are women, often in the childbearing age group. Of course this disease may also occur in children or in adult males. The criteria for the diagnosis of this disease include: 1) **Absence of primary parenchymal pulmonary disease** — (such as fibrosis, granuloma formation, or decreased pulmonary functioning mass) that may cause increased pressure in the pulmonary circuit. None was found at autopsy. 2) **Right ventricular hypertrophy with pulmonary hypertension** — the former was shown by autopsy, ECG and X-ray and the latter at cardiac catheterization. 3) **Normal pulmonary wedge pressure** — this was proved by cardiac catheterization. 4) **No left ventricular hypertrophy** — there was no evidence of this by ECG, fluoroscopy, or at autopsy. 5) **No cardiac valve deformities** — There were none except for the relative tricuspid insufficiency caused by marked right ventricular dilatation. 6) **No congenital heart disease** — There was none. A possible patent interauricular septum is suggested by the cardiac catheterization O₂ saturation data but none was found at autopsy. 7) **Pulmonary arterial dilatation** — The main pulmonary artery as well as the primary and secondary branches were markedly dilated. Small branches well beyond the thrombus could be followed out to the periphery of the lungs. 8) **Pulmonary atherosclerosis** — present. 9) **Pulmonary arteriosclerosis of medium and small arteries** — present. This was particularly striking with the elastic tissue stains. The presence of plexiform and angiomatoid lesions was also noted. 10) **Absence of source of peripheral emboli** — This requires the most discussion. Certainly there were no thrombi in the pelvic veins. The leg veins showed excellent reflux. Without completely dissecting out the leg veins bilaterally, phlebotrombosis cannot be completely ruled out. However, we have no positive evidence for the presence of thrombi in this case: the good reflux and lack of leg edema, calf swelling, or asymmetry, and the absence of clinical episodes of either thrombophlebitis or pulmonary embolism make the alternative of multiple pulmonary emboli unlikely.

The presence of an antemortem organizing thrombus in the pulmonary artery can be explained not on the basis of embolism, but on the basis of thrombosis in a dilated arteriosclerotic vessel. No other thrombi were seen in

small vessels and no evidence of old thrombi such as pulmonary webs were seen. Also the pulmonary arterial tree distal to the thrombus was markedly dilated and atherosclerotic. This might lead one to suspect that the thrombus was secondary to turbulence and pulmonary artery dilatation.

Primary pulmonary hypertension is thus a diagnosis of exclusion. The causes of pulmonary hypertension can be found in most textbooks. These are listed below and can be ruled out in this case. 1) **Parenchymal pulmonary disease** such as emphysema, bronchiectasis, fibrocystic disease, TBC, pneumoconiosis, sarcoid, idiopathic pulmonary fibrosis (Hamman-Rich), congenital cystic lung disease and collagen disease (scleroderma). 2) **Pulmonary arterial obstruction** from emboli, sickle cell anemia, cryoglobulinemia, carcinomatosis, schistosomiasis and arteritis. 3) **Pulmonary hypoventilation** with secondary pulmonary vasoconstriction from obesity (Pickwickian syndrome) or kyphoscoliosis. 4) **Pulmonary hypoventilation** from primary respiratory center damage. 5) **Passive pulmonary hypertension** from mitral stenosis, pulmonary vein obstruction, myxoma of left atrium and left ventricular failure. 6) **Hyperkinetic pulmonary hypertension** from left to right intra-or-extracardiac shunt such as ventricular septal defect, auricular septal defect, and patent ductus arteriosus. 7) **Decreased pulmonary tissue** from surgery or disease. These are all unlikely and we are left with primary pulmonary hypertension. The progressive dyspnea and fatigue leading to cyanosis with severe right heart failure is also characteristic of the disease. The absence of clubbing is also usual.

The unique feature of this case was the rupture of the pulmonary artery. I have not been able to find another instance of this in the literature. Dissecting aneurysms of the pulmonary arteries have been reviewed by Foord et al in the Archives of Pathology 1959. Liebow discussed a ruptured dissecting aneurysm of the pulmonary artery in a Clinicopathological Conference in 1961. He also mentioned a case of his own with congenital heart disease and pulmonary hypertension which showed medionecrosis of the pulmonary artery. However, a case of rupture of the pulmonary artery without dissection as was present in our case was not found.

It is interesting that there was a great deal of reaction and organization about the pulmonary artery at the site of rupture. This means that the process of disruption must have taken

place over a period of days and perhaps longer before complete rupture with pericardial tamponade ensued. There were areas of loss of elastica in the pulmonary artery which could be interpreted as mediocystic necrosis near the site of rupture.

Syncope and sudden death have been seen in primary pulmonary hypertension many times. This has been attributed to decreased cardiac output secondary to overload and failure of the right heart which cannot compensate for the increased venous return with increased output. This leads to low left heart output and coronary insufficiency. The increased end diastolic pressure in the right atrium is also thought to interfere with coronary artery filling by increasing coronary sinus resistance. Thus there is coronary artery insufficiency and myocardial ischemia secondary to low cardiac output and increased sinus resistance. Arrhythmias may then occur causing sudden death.

In his investigations of primary pulmonary hypertension James has described lesions of arteries in S-A and A-V nodes which he believes cause arrhythmias. These arterial lesions could explain syncope and sudden death in primary pulmonary hypertension. The lesions were not present in this case.

In summary, this is a patient with a rare disease, primary pulmonary hypertension, but with a unique mode of death — rupture of the pulmonary artery.

ANATOMICAL DIAGNOSES

Hemopericardium, 850 cc., with Pericardial Tamponade

Rupture of Main Pulmonary Artery

Thrombosis of Main Pulmonary Artery, Organizing Atherosclerosis of Pulmonary Artery and Major Branches (Primary Pulmonary Hypertension)

Arteriosclerosis of Pulmonary Arterioles

Cor Pulmonale, Marked (Right Ventricular Wall 0.9 cm.)

Pulmonary Atelectasis, Diffuse, Moderate

Passive Congestion of Liver, Marked with Necrosis

Right Heart Catheterization (5 months)

Irradiation to Cervix (14 months) for Invasive Squamous Cell Carcinoma

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ADENOID CYSTIC CARCINOMA OF THE MIDDLE EAR AND MASTOID CAVITY WITH A CASE REPORT

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Malignant tumors of the middle ear and mastoid are uncommon. Most often they are squamous carcinomas. Rarely are they adenocarcinomas. A review of the literature by Jaffee and Page in 1961 showed only 120 malignancies recorded in this site, and of these, only six were adenocarcinomas. They added a seventh case.

So far as we know, these seven cases of adenocarcinoma in this site are the only cases to have been reported to date, and we wish to add the eighth.

CASE REPORT

The patient, Mr. R., a 50-year old white male, was seen the first time in September of 1960, complaining of a hearing loss in the right ear dating from about three to six months prior to his consultation. The examination at that time showed a right serous otitis media. A myringotomy was done and a large amount of serous fluid was obtained from the middle ear.

The patient ignored the appointment to return to the office and returned by himself about 1½ years later. At that time he was again complaining of a hearing loss in the right ear; also, that he had lost part of the vision in the right eye, and had an impairment of the function of the movement of the right eyeball. X-rays of the mastoids and sinuses at this time revealed a partially sclerotic mastoid on the right side. The left mastoid was normal, as were the paranasal sinuses.

Several months later the patient accepted the suggestion of the otolaryngologist and of his local physician and went for further examination and treatment to a large clinic. After examination, a surgical exploration of the cerebellopontine angle was done and a small cyst with thickened arachnoid was found. The mastoid and ear problem at that time was evidently disregarded.

A year and a half after this operation, and three years after the first consultation, the patient returned to the office with drainage from his right ear and a so-called Gradenigo complex.

In October, 1964, a radical mastoidectomy was performed. The mastoid cavity was found to be filled with a chronically infected and thickened membrane. Further exploration of the middle ear showed a tumorous mass filling every space of the middle ear and extending anteriorly and medially.

At the time of the operation, as far as it was possible, all the tumorous tissue within the middle ear and the anterior portion of the petrous bone, including the ossicles, were removed, and the procedure was completed as a radical mastoidectomy.

Grossly the specimen removed at surgery consisted of a gray-pink rubbery piece of tissue 0.7 x 0.4 x 0.2 cm. and two smaller gray-tan fragments 0.2 x 0.5 cm. in greatest dimensions.

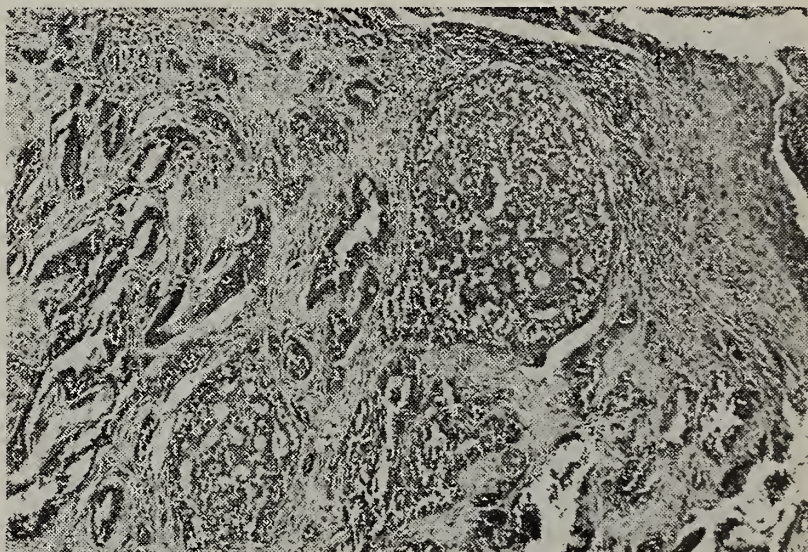


Fig. 1. Adenoid cystic carcinoma of mastoid cavity. H & E. 35X.

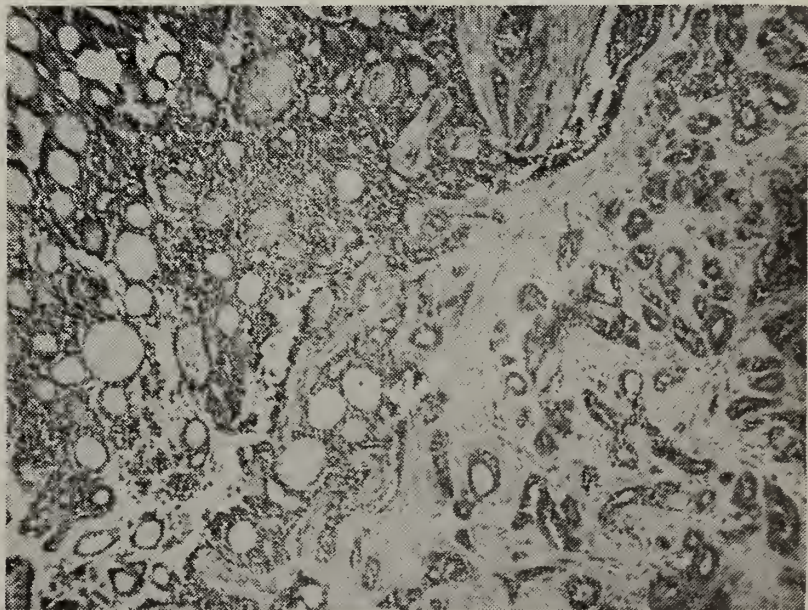


Fig. 2. Adenoid cystic carcinoma of mastoid cavity and middle ear. H. & E. 100X.

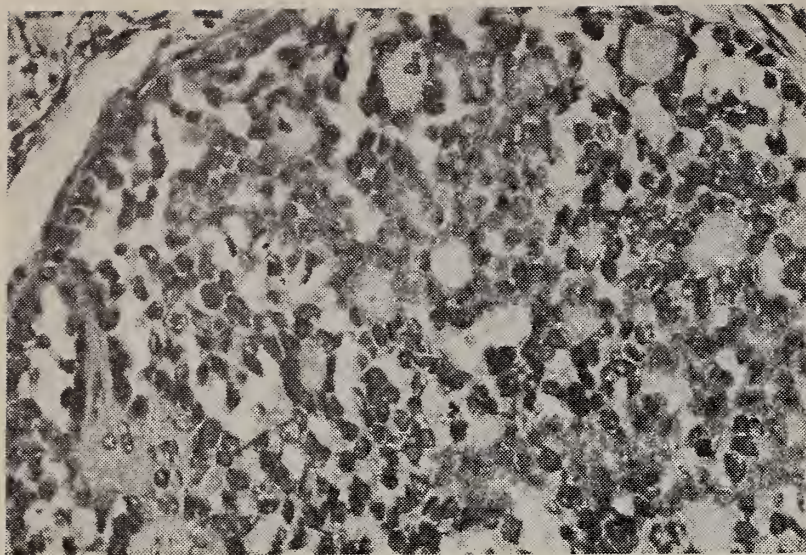


Fig. 3. Adenoid cystic carcinoma of mastoid cavity and middle ear. H. & E. 400X.

Microscopically (Figures 1, 2, and 3), the specimen showed a dense fibrous stroma in which were small irregular glandular spaces lined by epithelium which appeared to vary considerably in height. The glands were hyperplastic and in some areas were back-to-back. The smaller glands were lined in cuboidal or low columnar epithelium. The nuclei were basal and uniform in appearance.

The specimen was seen in consultation by the A.F.I.P. (Dr. S. H. Rosen) who concurred in the diagnosis of adenoid cystic carcinoma of the mastoid cavity.

After surgery the patient received cobalt therapy. In the following months the patient has been examined several times and the mastoid cavity appears to have healed satisfactorily.

DISCUSSION

Adenoid cystic carcinoma arises from glandular elements or mucous membrane in many locations. We have seen it most frequently in salivary glands and the breast. Recently, two cases have been reported from the uterine cervix,^{8, 9} and we hope presently to add a third to the literature. It is also extremely rare in the middle ear, this being, so far as we know, only the eighth reported case.

Chronic infections of the middle ear and/or mastoid can result in squamous metaplasia of the mucous membrane from which the more common squamous carcinomas probably arise.

Signs and symptoms which may occur with malignancies of the middle ear include prolonged otorrhea, pain, bleeding, invisible growth through the external canal, hearing loss, facial palsy, paralysis, vertigo, tinnitus, and tenderness over the mastoid area.

Prognosis in this disease heretofore has been very poor. Previously, radical surgery was thought to offer the best chance of palliation and was usually followed by x-ray therapy. Cures for any length of time have been un-

known although Grabscheid reported a case in 1943 who was alive four years after radical surgery and x-ray.

Our patient received cobalt therapy following surgery and is doing well twenty-six months after surgery and diagnosis. The mastoid cavity and middle ear are dry although the eye symptoms remain the same.


SUMMARY

We have reported, insofar as we know, the eighth case of adenoid cystic carcinoma of the middle ear. Tumors of the middle ear are rare, only 120 having been reported by Jaffee and Page in 1961.

Prognosis heretofore has been poor. Our patient received cobalt therapy after surgery and appears to be doing well twenty-six months after the original surgery.


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Giant Pericardial Cyst with Cardiac Manifestations

Thomas J. Yeh, M.D., Assistant Professor of Surgery (Thoracic) and

Isam N. Anabtawi, M.D., Instructor in Surgery (Thoracic)*

A pericardial cyst very rarely causes symptoms, and as a rule the lesion is removed only because it must be differentiated from a mediastinal tumor. A few exceptions have appeared in the English literature; among those are the cases reported by Churchill and Mallory,¹ Lam,² Shidler and Holman,⁴ and Ross and Ramos.³ Dysphagia, dyspnea and cyanosis were prominent symptoms. In each of these cases the symptoms were completely relieved by excision of the cyst. This is a case report of a patient with a giant pericardial cyst producing dyspnea and assorted objective cardiac manifestations, posing an interesting diagnostic problem.

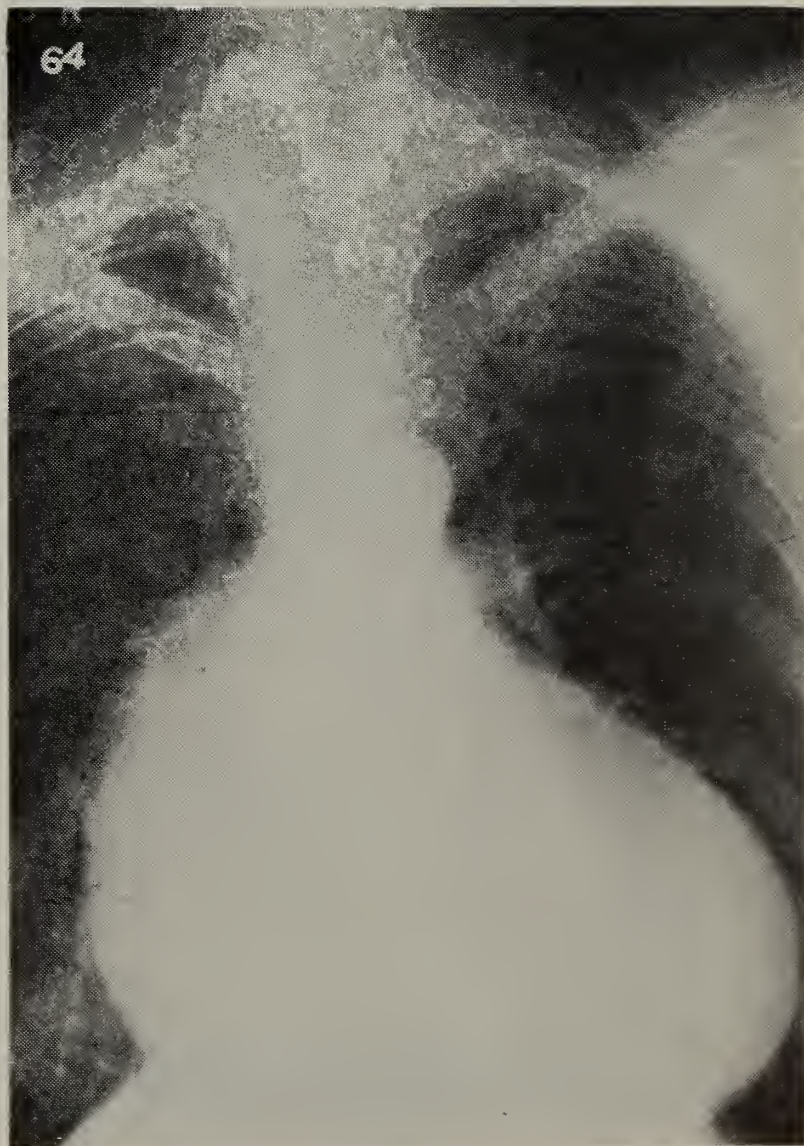
REPORT OF A CASE

H. K., a 55 year old man was admitted to Eugene Talmadge Memorial Hospital on 7-6-65 because of a large mediastinal mass. The lesion was first noted about 11 months previously. About 9 months previously he had great difficulty with dyspnea accompanied by ankle swelling, for which he was digitalized with partial improvement. On examination at admission he was 195 cm tall, and had a marked kyphosis and a slight roto-scoliosis. The blood pressure was 140/90 mm Hg. A paradoxical pulse of 20 mm Hg at rest and 30 mm Hg on deep respiration was noted. The left precordium was protuberant and a forceful cardiac pulsation was visible. The apical impulse was diffuse and heaving. The area of cardiac dullness extended to the left anterior axillary line. A grade III harsh systolic murmur was heard at the pulmonic area during expiration, nearly disappearing during inspiration. The liver was palpable but not pulsatile. Electrocardiogram was interpreted as chronic cor pulmonale and possible old myocardial infarction. The Master's two step test failed to show additional ischemia. Chest X-ray and cardiac obliques showed a large anterior mediastinal mass extending into both hemithoraces, displacing the esophagus posteriorly to the left. A normal cardiac shadow could be discerned as a double density within the mass on PA projection (Fig. 1 a. b. c.). The clinical diagnosis was mediastinal tumor with cardiac compression and possible old myocardial infarction.

On July 21, 1964 he was explored through a right posterolateral thoracotomy. A huge, tense cyst with transmitted pulsation was found behind the heart, bulging partially into the right hemithorax. The bulk of the cyst was in the left hemithorax, displacing and compressing the heart against the anterior chest wall.

During dissection the cyst was ruptured and 3000 cc's of clear, watery fluid were aspirated. The cyst wall was completely removed. No communication with bronchus or pericardial space was demonstrated. On microscopic examination the cyst wall was composed of a thin layer of dense fibrous tissue with mesothelial lining. The murmur, the prominent precordial pulsation, the paradoxical pulse, hepatomegaly and dyspnea all disappeared and he was discharged home on the 7th postoperative day. Follow-up chest X-ray revealed a normal sized heart (Fig. 2). When last seen on November 19, 1964, five months after surgery, he was symptom-free. Pulmonary function study showed a great improvement. (Table 1).

Fig. 1. a. b. and c. Preoperative chest X-rays in PA, right anterior oblique and left anterior oblique views showing large mass superimposed on normal cardiac shadow.



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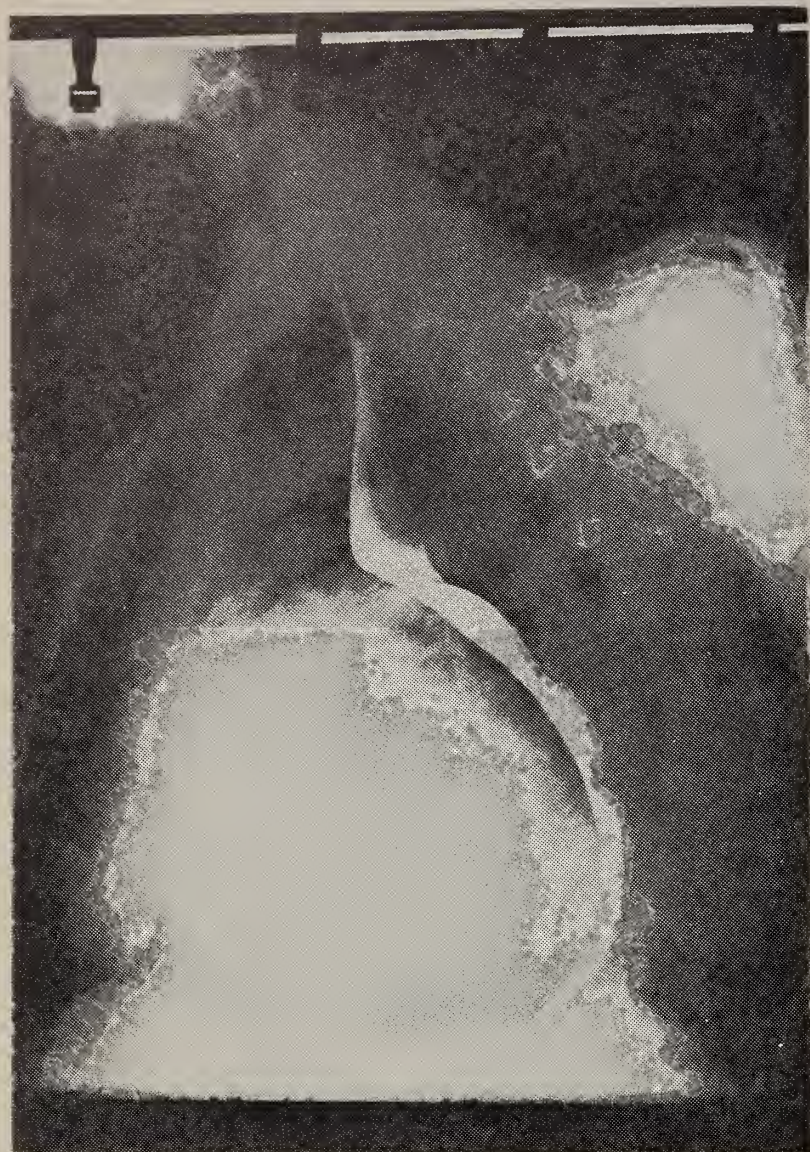


Fig. 1b



Fig. 1c

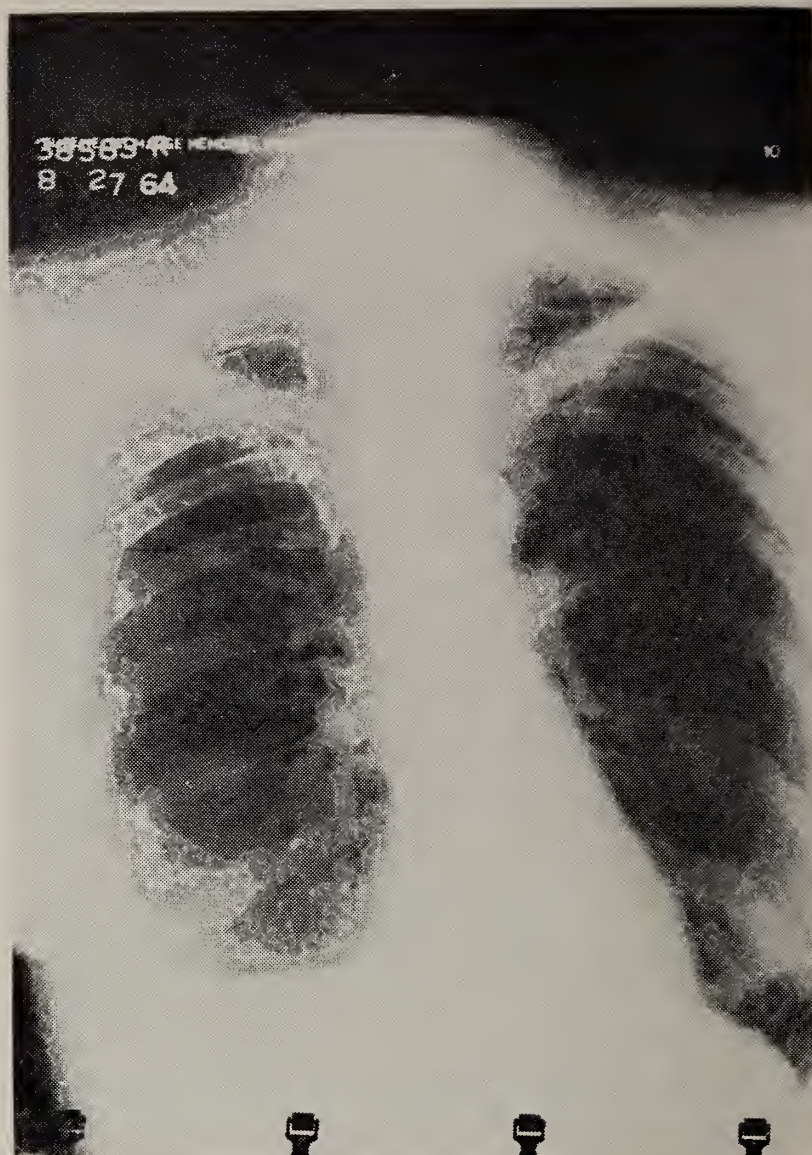


Fig. 2. Postoperative chest X-ray.

DISCUSSION

All of the cardiac findings disappeared after surgery and can therefore be attributed to the presence of the mass. The paradoxical pulse, no doubt, was due to interference with cardiac filling, the murmur due to pulmonary artery compression, precordial heave due to displacement of the heart, and hepatomegaly due to displacement of the liver. Pericardial effusion as a diagnosis was effectively ruled out by the X-ray findings of a separate distinct heart shadow within the mass on PA view.

SUMMARY

A 55 year old patient with an unusually large pericardial cyst containing 3000 cc's of fluid, and producing a heart murmur, precordial heave, paradoxical pulse, hepatomegaly, and dyspnea, has been presented. Because of these findings, the nature of the mass lesion was not clarified before thoracotomy. All symptoms and signs disappeared upon surgical removal of the cyst.

TABLE 1.
Pulmonary Function Before and After Excision of the Pericardial Cyst

	Vital Capacity ml	Timed Vital Capacity 1 second %	3 seconds %	Maximal Voluntary Ventilation L/min.
Predicted Normal	4450	75	95	153
Preoperative (July 8, 1964)	4034	63	100	80
Postoperative (Nov. 19, 1964)	6460	75	100	124

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DESIDERATA *

(Found in old St. Pauls Church, Baltimore, dated 1692 and kept by Adlai Stevenson on his bedside table.)

Go placidly among the noise and the haste and learn what peace there may be in **silence**.

Speak your truth quietly and clearly; and listen to others, even the dull and the ignorant; they too have their story.

If you compare yourself with others you may become vain and bitter; for always there will be **greater** and **lesser** persons than yourself.

Enjoy your achievements as well as your plans. Keep interested in your career, however humble; it is a real possession in the changing fortunes of times.

Exercise caution in your business affairs; for the world is full of trickery. But let not this blind you to what virtue there is; many persons strive for high ideals and everywhere life is full of heroism.

Be yourself. Especially do not feign affection. Neither be cynical about love; for in the face of all aridity and disenchantment it is **perennial** as the grass.

Take kindly the counsel of years, gracefully surrendering the things of youth.

Nurture strength of spirit to shield you in sudden misfortune, but do not distress yourself with imaginings.

Many fears are born of fatigue and loneliness.

Beyond a wholesome discipline, be gentle with yourself. You are a child of the universe no less than the trees or the stars. And whether or not it is clear to you no doubt the universe is **unfolding as it should**.

Therefore be at peace with God, whatever you conceive him to be. And whatever your labors and aspirations in the noisy confusion of life keep peace with your soul.

With all its sham, drudgery and broken dreams, it is still a beautiful world.

(*DESIDERATA — plural of DESDERATUM, which means anything desired as essential or needed.)

Path CAP sule

Submitted by the College of American Pathology in connection with the South Dakota Society of Pathologists.

THE DIAGNOSTIC VALUE OF URINARY STEROIDS

The steroid hormones include a number of complex compounds which regulate water and electrolyte excretion, affect the metabolism of carbohydrates, fats and proteins, and are essential to sexual development and function. The steroid hormones are synthesized in the adrenal glands and in the gonads; the activity of these organs is regulated by the pituitary. It is apparent that various hypoplasias, hyperplasias and neoplasms are capable of producing many disease states when these organs are involved.

A portion of the steroid hormones and their metabolites is excreted in the urine and can be measured quantitatively. The amount excreted is closely related to the functional activity of adrenals and gonads. Therefore, it is possible to detect functional abnormalities involving these structures by an analysis of the amount of the various metabolites excreted in the urine.

There are three frequently measured steroid fractions. All have the same basic structural formula. The 17-ketosteroids are those compounds which have a keto group on Carbon-17 of the steroid nucleus, and the 17-hydroxycorticosteroids and Porter-Silber chromogens are those compounds which have a hydroxyl group on Carbon-17 of the steroid nucleus. For the sake of clarity these three classes of compounds will be discussed separately.

17-Ketosteroids: In males approximately two-thirds of the 17-ketosteroids are derived from androgens produced by the adrenal cortex and one-third from the androgens produced by the testes. In females almost all of the 17-ketosteroids arise from androgenic compounds manufactured by the adrenal cortex. The level of 17-ketosteroid excretion in the female is therefore a measure of androgen activity. However, in the

male it does not constitute a measure of all androgens, because testosterone, the most potent androgen of all, is not a 17-ketosteroid.

The measurement of 17-ketosteroids is used primarily as an index of adrenal cortical function but is inferior to the measurement of 17-hydroxycorticosteroids. Moreover, a significant amount of urinary 17-ketosteroids may be derived from breakdown of non-androgenic steroids, mainly in the liver, and occasionally levels of 17-ketosteroid may be affected by alterations of hepatic metabolism.

17-Hydroxycorticosteroids: These compounds are frequently referred to as Ketogenic Steroids because they can be converted easily to 17-ketosteroids in the laboratory. The advantage of converting them to 17-ketosteroids is that they can then be measured by the same procedure used to measure the normally occurring 17-ketosteroids.

The 17-hydroxycorticosteroids are produced entirely by the adrenal cortex and are involved in carbohydrate, protein, water and electrolyte metabolism. The measure of 17-hydroxycorticosteroids is considered by many to be the best laboratory assessment of adrenal cortical function. Therefore, elevation or diminution of 17-hydroxycorticosteroids can point to hyperplasia, hypoplasia or neoplasia of these organs.

Porter-Silber Chromogens: These compounds include mainly cortisone and hydrocortisone. They are actually a part of the 17-hydroxycorticosteroid fraction. However, in the laboratory the Porter-Silber chromogens can be separated from the other 17-hydroxycorticosteroids. The Porter-Silber chromogen fraction is elevated in Cushing's syndrome.

Using the three measurements described, the findings in some important diseases are presented in tabular form (Table I).

TABLE I
Urinary Steroid Values in Various Diseases

Clinical State	17-Hydroxy	Porter-Silber	17-Keto
Cushing's syndrome	++	++	N/+
Addison's disease	—	—	—
Cirrhosis	N/+	N/+	—
Aldosteronism	N	N	N
Pituitary failure	—	—	—

+ = increased — = decreased N = Normal

Normal Values: Table II.

Specimen: Aliquot of 24 hour urine collection.

Collection of Specimen: Urine for 17-ketosteroids may be collected in 15 ml. of concentrated hydrochloric acid. Urine for 17-hydroxycorticosteroids and Porter-Silber chromogens must not be collected in acid and should be kept refrigerated.

Certain drugs such as paraldehyde interfere with the determination of Porter-Silber chromogens. It is preferred to withhold all medication **48 hours** prior to collection of urine for any of these determinations.

TABLE II

NORMAL VALUES OF URINARY STEROIDS					
17-KETOSTEROIDS (mg/24 hrs.)					
Age (Yrs.)	0-14 days	0-3	3-6	6-8	8-10
MALE or FEMALE	1.5-2.5	0-0.5	0-2.0	0-2.5	0.7-4.0
Age (Yrs.)	10-12	12-14	14-16	16-50	60-90
MALE	0.7-6.0	1.3-10	2.5-13	10-20	20-5
FEMALE	0.7-5.0	1.3-8.5	2.5-11	5-15	13-3
17-HYDROXYCORTICOSTEROIDS (mg/24 hrs.) (Ketogenic Steroids)					
Age (Yrs.)	0-3	3-6	6-10	10-14	14-50 Over 50
MALE					8-20 4-14
	1-4	1-6	2-8	2-10	
FEMALE					5-14 2-10
PORTER-SILBER CHROMOGENS (mg/24 hrs.) (Mainly Cortisone & Hydrocortisone)					
Age	0-3	3-6	6-10	10-14	Adult
MALE					4-12
	2-4	3-6	4-8	4-10	
FEMALE					4-8

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ELECTROPHORESIS

The greatest unrealized potential value of the technique of electrophoresis lies in its use as a screening test similar to routine urinalysis and complete blood counts in the initial work-up of a patient. Used in this manner a normal report has great value in itself ruling out whole categories of serious diseases. When abnormal, it points the way to more specific tests and in certain instances permits a pathognomonic diagnosis.

Normal values are established in each laboratory on the basis of experience with a large number of sera (a hundred or more) from healthy persons of various ages from childhood to senescence. See Table IA. It is important to keep in mind the changing values of gamma globulin during infancy.

Table IB.

Abnormal patterns have been observed with significant frequency in the diseases listed in Table II. With increasing use as a screening procedure earlier changes from normal may be observed in these and other disease states. The development of cellulose acetate paper and starch gel methods yielding more fractions may also add some refinements to differential diagnosis of abnormal patterns.

Finally electrophoresis is the most specific method to diagnose sickle cell anemia, Thalassemia and other inherited hemoglobinopathies.

TABLE IA

NORMAL RANGE		
Albumin	54-70%	3.7-5.5 g/100 ml
Alpha ₁ Globulin	2- 5%	0.1-0.3 g/100 ml
Alpha ₂ Globulin	7-11%	0.4-1.0 g/100 ml
Beta Globulin	8-14%	0.5-1.1 g/100 ml
Gamma Globulin	10-20%	0.5-1.2 g/100 ml
TOTAL	100%	6.2-8.1 g/100 ml

It has been suggested by eugenists as a means of screening large numbers of high school chil-

dren to detect the heterozygous state as an adjunct to premarital counseling.

TABLE IB

GAMMA GLOBULIN (g/100 ml)		
Age of Patient	Mean Value	Normal Range
1 week	0.7	0.4-0.9
1-3 mo.	0.3	0.2-0.4
3-6 mo.	0.4	0.2-0.6
6-12 mo.	0.5	0.3-0.7
12-18 mo.	0.6	0.4-0.8
18-24 mo.	0.8	0.5-1.1
Over 2 yrs.	Rapid increase to Normal Adult Values	

TABLE II

ABNORMAL ELECTROPHORESIS ASSOCIATED WITH DISEASE

TP	A	a ₁	a ₂	B	Y	
—	+					Acute infection
—	+		—			Asthma, other Allergies with Poor Response to Therapy
—	+	+				Carcinomatosis
—			+			Chronic Infection
			+			Cryoglobulinemia—(isoelectric band)
—	+	+				Diabetes Mellitus
—	—	+				Glomerulonephritis
—	—		+			Hepatic Cirrhosis—(merger of B—y peaks)
—	—	—	+	+		Hepatitis, Viral
—	—	+		+		Hodgkins Disease
—				—		Hypogamma globulinemia
—			+			Leukemia, Myelogenous
—	+		+			Lupus Erythematosus
—	—		—			Lymphoma and Lymphocytic Leukemia
+	—		+	+		Macroglobulinemia
+	—		+			Myeloma—(Narrow Homogeneous Band between a ₂ and y)
—			+			Myesthenia
—		+	+			Myxedema
—	—	+	—			Nephrosis—(Highest a ₂ Elevation)
—	+					Rheumatic Fever
—	+		+			Rheumatoid Arthritis
+	—	+	+	+		Sarcoidosis
—	—	—	—	—		Scleroderma
—	—	+	+	—		Ulcerative Colitis, other exudative enteropathies
+ = increase						
— = decrease						

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S.D.S.M.A. LOSES SUPREME COURT DECISION

The South Dakota Supreme Court reversed a decision that made property of the South Dakota State Medical Association exempt from taxation.


The Supreme Court ruled in favor of the Minnehaha Board of County Commissioners, which had appealed a verdict in Minnehaha County Circuit Court. The circuit court found a part of the real property was exempt.


The Supreme Court said that the objectives of the association are laudable and it is evident that dissemination of health information and other public services by the group are of benefit to the public. But the court added that there are elements of personal advantages and profit to members of the association and it does not qualify as being “exclusively” for benevolent purposes.




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DEADWOOD DOCTOR

By F. S. Howe, M.D.

CHAPTER VII

Deadwood Politics

I got into Deadwood politics accidentally and stayed in for 19 years because I've never believed in backing away from a good fight.

In 1917 I was appointed to the city council as an alderman from the third ward to take the place of a member of the council who had left Deadwood. I was a member of the council for 7 years. During much of that time I was president of the council and chairman of the finance committee.

About 1922, the Board of Education of the Deadwood school district decided that our old out-dated building must be replaced by a new and modern building. In order to get the necessary public support to pass a bond issue, they called public meetings. For a time these public meetings were a regular love feast. It seemed the unanimous opinion that Deadwood must have more modern school buildings. George V. Ayres proposed that we ask for a \$250,000 bond issue. That almost took my breath away, but I thought if a man of Mr. Ayres' experience believed that was what we needed, who was I to oppose it? At a later, and I believe the last meeting, W. E. Adams, who was then mayor, got up and said, "\$50,000 and not one cent more." Being mayor and the leading citizen of Deadwood at that time, that certainly threw a monkey wrench in the machinery.

This meeting really became hot. The late Charlie Keene who was enthusiastically for the new school facilities immediately got up and shook his finger in Mr. Adams' face and said, "What this here town needs is some first class funerals." Then the fight was on.

Mr. Adams lined up the Homestake Mining Company, both the C.B. & Q. and C. & N.W.R.R. Companies, and Horace Clark, the heaviest individual tax payer and property owner in Deadwood. Needless to say, this fight really became bitter. When election day finally came around, both sides were getting out every vote that could be found. Late in the afternoon, I found that the then Methodist minister and his wife had not voted. I made a trip to the house and the minister himself came to the door. I said, "Reverend K-----, you have not voted yet. We need your vote." Much to my disgust, the Reverend said, "This is nothing but an old down

and out mining camp. You don't need any new school." I told him that he should go and vote against it if that was the way he felt.

We finally won out by a substantial majority in spite of all the opposition. However, our troubles were not over. Chambers Kellar, the Chief Attorney for the Homestake Mining Company, decided to go to court. A committee which, as I remember, was headed by me, had a conference with Mr. Kellar and he finally agreed on a \$175,000 issue instead of the \$250,000 issue. Otherwise it would have to be decided by the courts. We had the architects draw up new plans and sold the bonds. The best bid which we could get was \$3,000 under par. Mr. Kellar stuck to his guns and said we had to get par for the bonds or make up the amount. In short order we raised the extra \$3,000 and the contract was let.

Our present school was dedicated in 1924 and it now seems strange that we should have had such a bitter fight to get modern school buildings with gymnasium and auditorium. Chambers Kellar afterwards became one of my very best friends and up until the time of his death I admired and respected him.

It goes without saying that this fight was not over, however. In 1924 I was approached by a great many of my friends to run for mayor. My petition was circulated and very generally signed. The Adams' forces tried in every way to agree on a compromise candidate but inasmuch as I had agreed to run I informed them that I was in the fight to the finish. Mr. Adams' campaign manager informed me that in that case Mr. Adams would personally run and as he had never been beaten, I was in for sure defeat. I informed him if the people decided they were satisfied with the old regime, that would be fine with me. Our campaign slogan was "Progress and Economy." The opposition repeatedly stated that progress and economy could not and would not go together. When the votes were counted, I had won by a very substantial majority. One of Deadwood's leading attorneys said that there were not that many votes in Deadwood, that we had certainly found a lot of votes in Mt. Moriah. So far as I know, neither side voted Wild Bill or Calamity Jane, but you can be sure that both picked up every vote possible.

I served for 6 terms as Mayor and paid off a \$100,000 debt, leaving the city debt free, except for some paving bonds which were a lien against property only. The next bitter fight was an attempt to change the form of govern-

ment and thus remove me from office. This fight was more bitter than any of the preceding fights and we won by a substantial majority. As soon as the election was over, my attorney, John T. Heffron, began suit against the Deadwood Pioneer-Times for libel, for what they had called me in the campaign. They made the necessary apology in their papers which my attorney said was legal. To me, it seemed to mean very little.

When the Adams Museum (a gift of my long time political enemy) was dedicated, as Mayor of Deadwood, I was supposed to accept it in the name of the city. I was asked to be one of the speakers. Mr. Adams wasn't in a position to ask me so he got a friend to make the request. I said that I would be very happy to accept it as Mayor for the city, which I did. E. W. Martin, former Congressman, Dr. O'Hara, President of the School of Mines, Senator Bulow, and myself were the principal speakers. W. E. Adams and I were bitter political enemies but we both loved Deadwood.

One of the very amusing incidents which happened during one of my terms as mayor was when the osteopathic doctors had their annual meeting in Deadwood. Dr. Wasner of Deadwood was president and asked me to make the welcoming address as mayor. I was very happy to do that but wondered just what a doctor could say to the osteopaths. I went to my good friend, John T. Heffron, for advice, and after listening to my story, he said, "You are in a hell of a mess." Finally, however, I decided that I would make a very brief welcoming speech and then give the boys a talk on Wild Bill, Calamity Jane, Poker Alice, Deadwood Dick and so on. After I had talked for some time, I said, "Well, boys, I think it is time for me to quit." They said, "No, go on, we are enjoying it." I also enjoyed it.

The high point of my career as Mayor of Deadwood, of course, came in the year 1927 when President Coolidge spent the summer at the State Game Lodge in the Black Hills. When President Coolidge arrived early in the month of June, we immediately got in touch with his secretary and made an appointment to see him at his office in the Rapid City high school building and invited him to be our guest at the Days of '76 celebration, the first week of August, 1927. Our committee was headed by the late Judge Rice. Other members of the committee were John T. Heffron, City Attorney, Fred Gramlich, representing the Chamber of Commerce, Lee Boyer and myself as Mayor. The

Deadwood Chamber of Commerce selected a beautiful rod and reel which was to be our peace offering to him when we gave him the invitation to come to Deadwood. Judge Rice was our spokesman.

One of the members of our party was carrying a small mysterious looking package wrapped in a newspaper. We were all very curious as to what it was and the Secret Service men looked on him with great suspicion — in fact, watched him every minute. After Judge Rice had presented the rod and reel together with our invitation, which was, of course, done in a very beautiful and masterly manner, the President's party as well as our party turned to leave, thinking that the ceremony was over. Just at that time the member of our party who carried the package stepped out and said, "Just a minute, Mr. President. I have here a jar of wild raspberry jam made from berries picked by my wife and the jam itself was made by my wife."

Everybody seemed very much amused except the members of our party. To say that we were embarrassed is an understatement. For a long time after, the members of our committee had to submit to many jokes at our expense.

When the days of the celebration arrived, the President and his party boarded a special Burlington train at Custer, South Dakota, and came to Deadwood. Colonel Starling, Chief of the Secret Service, preceded the party and made complete arrangements in every detail as to the line of march and just how the streets should be roped off, etc. Deadwood had the largest crowd in its history on the day that President Coolidge was our guest. President and Mrs. Coolidge went to the grounds in my open Cadillac car. Mrs. Howe and myself occupied the box with President and Mrs. Coolidge. We found Mrs. Coolidge one of the most charming women we have ever met. President Coolidge was not nearly so silent as some of the correspondents would have had us believe.

The big event of the day was when the Sioux Indians, of which there were some five or six hundred present, called the President out of his box, made him a member of the Sioux Tribe and called him Chief Leading Eagle. They placed on his head a most ornate and beautiful feathered headpiece with the feathers trailing on the ground. It was really a beautiful handmade piece of work. President Coolidge, however, seemed rather embarrassed, although I think he was pleased. The high point of President Coolidge's stay in the Black Hills was, of

course, his announcement, "I do not choose to run." I still remember the efforts that were made to place a different interpretation on the President's words but with Coolidge, "I do not choose to run" meant just what it said: "I will not be a candidate."

Many amusing stories have been told of President Coolidge's stay in the Black Hills. When I first met President Coolidge the day after his arrival in the Hills, I was shocked at his emaciated appearance, but before he left he did not look like the same man. President and Mrs. Coolidge attended the little church in the small town of Hermosa, some 20 miles from the Game Lodge, on Sundays. One story that has gone the rounds was that on one Sunday morning Mrs. Coolidge, not feeling too well, decided to stay home. The President went to church as usual. During the dinner hour, Mrs. Coolidge asked President Coolidge, "What did the preacher talk about today?" His answer was "Sin." She asked further, "What did he say about it?" Again his answer was brief, "He was against it."

(To be Continued)

South Dakota Regional Heart, Cancer and Stroke Program is presently taking applications for the position of Director. This position may be filled by either a medical doctor or a person with background in medical administration, hospital administration or related fields. Salary is open. Please contact Richard C. Erickson, Executive Secretary, South Dakota State Medical Association, 711 North Lake Avenue, Sioux Falls, South Dakota 57104.

THE PHYSICIAN'S ROLE IN BLUE SHIELD

Thanks to the pioneering of physicians and community leaders who began establishing Blue Shield Plans over 25 years ago, some 53 million Americans today have protection against the costs of physicians' services under this unique prepayment system.

Blue Shield was organized by physicians and supported by medical societies at a time when commercial insurance companies claimed that underwriting health care protection was impossible.

Over the years, however, physicians who gave countless hours of their valuable time, without remuneration, have been able to put Blue Shield on a sound actuarial basis.

How does Blue Shield operate?

First, Blue Shield is community oriented, serving the entire community — not just those who are the most healthy or are the most profitable to enroll. All Plans are non-profit corporations for community service.

The physicians — who provide the medical service — have a voice in directing the policies of Blue Shield and comprise the majority on the boards of trustees of most local Plans as well as of the National Association of Blue Shield Plans.

Blue Shield's most unique principle is that of physician participation. Participating physicians originally were, and in theory still are, guaranteeing the adequacy of Blue Shield reserves with their services.

A second phase of participation is the service concept. In this, the majority of physicians in a community voluntarily agree to cooperate by accepting the Plan's payment as full payment for their professional services to patients with certain incomes. The Blue Shield Plans which do not offer paid-in-full contracts must demonstrate that their payments are equal to the average fees charged 75 percent of the patients in their areas.

Thus, the participating physician plays an extremely active role in the entire Blue Shield program — especially in determining policy and setting payment levels.

Blue Shield has pioneered in the field of medical care prepayment in this country — because the medical profession stood behind it.

For Blue Shield to continue to serve both the public and the medical profession, it must continue to enjoy the support of the entire medical team.



POST MORTEM

One thing, at least, is apparent from the recent elections: The American people are not completely sold on the Great Society. It is impossible to know exactly which programs of the 89th Congress were so decidedly repugnant to the current majority, but it is not difficult to know where the dissatisfaction of the medical profession lies.

For the Medicare Bill did not become a good, effective, workable solution to the problems of medical care for the aged or any other group simply by becoming a law. The reservations, inconsistencies, inequities and false assumptions that were in the context of the bill before it became a law are still there. The problems have merely been multiplied by the fact that we as physicians are now duty-bound, for the sake of our patients and our own skins, to try to understand if possible, precisely what the law does — and does not — require of us. We need to know all of the implications of all of the provisions of this law and how they will affect our relationship with all of our patients, not only those who are covered by Medicare, but also those who are not.

Certainly we must obey the law, but this is only possible if we understand the law, and that, Doctor, is not easy. There are many sections of the law that are inscrutable — so vague and ambiguous that only time and court decisions will ever clarify them. There are other aspects, such as Title 19 that are broadly permissive, and will require state action to implement them. We will have to be alert to the activities in our own State House before we will know whether or not we can accept their interpretation. Other aspects of the law are clear enough but are complex and impractical.

One aspect is very clear and very specific and

it should be carefully noted. There is no clause or provision in the law which compels the physician to participate in any phase. The physician is not legally bound to fill out any forms, to accept payments from any source, to perform any function which he does not consider to be in the best interest of his patients. There is, in fact, only one aspect of the law that is compulsory, and that is the compulsion to pay the taxes involved.

Without a doubt, it would be easier for us to fill out in triplicate any and all forms placed upon our desks by hospitals, patients, and welfare agencies. It would be less troublesome to meekly accept whatever directives Washington may send down in the next few weeks or months. We could just drift along through trial and error until the situation becomes acute. In the short run it would save a lot of bother. But in the long run it will mean the end of the free practice of medicine.

If you doubt that possibility, look again at Title 19 of the Medicare Law. Try to logically deduce the inevitable outcome of the implementation of that provision in all fifty states, particularly if all states define medical indigency as generously as New York State has already done, and as generously as South Dakota proposes to do. There is no way this plan could possibly function without complete Federal control of all expenditures. Your fees will be the first to feel the purge. Federal agents (who may or may not know anything about medicine) will decide which drugs you can administer, which procedures you can use, and which patients you can hospitalize for how long. Whether you like it or not, you will be an agent of the Federal Government.

Does anyone really think that this is the concept the American people bought when they accepted the Medicare Law? Of course it isn't.

They bought a pretty package with a nice little label. They had no idea what was in the package. The tragedy is, their doctors didn't know either.

Bill G. Church, M.D.

OUR STATE JOURNAL

Reflections for the New Year

The South Dakota Journal of Medicine was established in January 1948 by John C. Foster and Dr. Roland G. Mayer to afford the doctors of South Dakota an opportunity to record their scientific work, to express their opinions and to serve as a media for dissemination of news and meetings. This venture was considered quite bold at the time. The membership was urged to support the project with the publication of the interesting cases, newsworthy events and editorials. This policy has been maintained; there has been increased participation of the membership in these objectives; this participation is welcomed and urged.

Following the congressional drug investigations advertising fell to an all time low and the very existence of the Journal was jeopardized. Mr. Dick Erickson met and has nicely handled this problem. Our advertising is now at an all time high.

Your support of the Journal, in patronizing the advertisers, in submitting your publications, editorials and news, is the most vital factor in insuring continued growth. Your help is needed and we urge your participation in this New Year.

Robert E. Van Demark, M.D.

LETTER TO THE EDITOR

November 21, 1966

Richard C. Erickson
Executive Secretary
S. D. Medical Association
711 North Lake Avenue
Sioux Falls, South Dakota
Dear Mr. Erickson:

We have received the check of \$50.00 for the Committee on Careers. Thank you very much for your generous contribution.
May God bless you.

Sincerely,
Sister M. Colette, Treasurer
South Dakota League for Nursing



DOCTOR, DO YOUR PATIENTS UNDERSTAND YOUR FEES?

Patients hesitate to ask about fees. But they want to know. They naturally worry about what their medical costs will be. And if they don't feel free to talk about it, serious problems — misunderstanding, resentment and even deep hostility — can arise, threatening the all-important rapport between you and your patients.

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Pop's Proverb

How great the abyss between education and intelligence.

D. L. Scheller, M.D., Arlington, recently discussed LSD and other narcotics at a meeting of the Arlington PTA.

* * *

A program on Auscultation of the Heart, Phonocardiography and Pulse Tracings will be offered by the Institute for Cardiovascular Diseases at Good Samaritan Hospital, Phoenix, Arizona on April 6th and 7th, 1967. This is an official Post-Graduate Course of the American College of Cardiology. For information, write to William D. Nelligan, Executive Director, American College of Cardiology, 9650 Rockeville Pike, Washington, D. C. 20015.

* * *

The USD Cleft Palate Team held a clinic at the Crippled Children's Hospital and School in Sioux Falls on January 5th. Additional clinical sessions have been scheduled as follows:

May 4, 1967 — Rapid City, South Dakota.

June, 1967 — University of South Dakota, Vermillion.

The Watertown District Society met on December 6th, at which time **P. Preston Brogdon, M.D.**, made his presidential visitation. Officers of the Society elected during the meeting include **E. H. Heinrichs, M.D.**, President; **A. K. Brevik, M.D.**, Vice president; **T. J. Wrage, M.D.**, Secretary-Treasurer; **G. E. Tracy, M.D.**, and **R. Auskaps, M.D.**, Delegates; **C. J. Clark, M.D.**, and **D. N. Fedt, M.D.**, Alternate Delegates.

* * *

Isaiah R. Salladay, M.D., Pierre, left December 1st for a 60-day voluntary tour of duty in Viet Nam. This is Dr. Salladay's second tour of service in Viet Nam.

John T. Elston, M.D., Pennington County Board of Health chairman, agreed recently to accept the position of county health officer until a permanent appointment can be made. The position has been handled temporarily by Dr. Elston since the resignation of **N. R. Whitney, M.D.**

* * *

Robert Giebink, M.D., Sioux Falls, has offered to donate land as a site for a new Minnehaha County juvenile detention home. Dr. Giebink has also donated land for the Adjustment Training Center, which, when completed, is designed to assist mentally retarded individuals to become useful citizens.

* * *

ANNOUNCEMENT

A continuation course in "Clinical Electroencephalography" will be conducted on June 5-7, 1967 in Philadelphia, Pennsylvania. This is the second course sponsored by the American EEG Society (aided by a grant from the Bureau of State Services, U.S.P.H.S.) and is designed for physicians who have had little or no formal EEG training. Inquiries about further details of the course and registration procedure should be addressed to Dr. Donald W. Klass, EEG Course Director, Mayo Clinic, Rochester, Minnesota.

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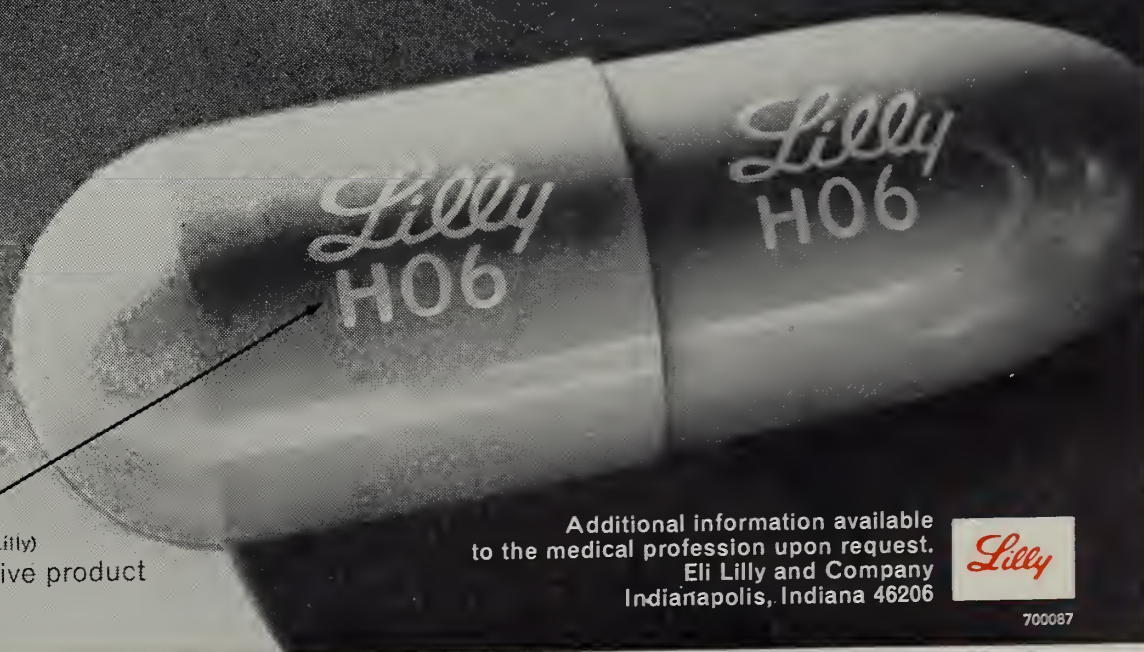
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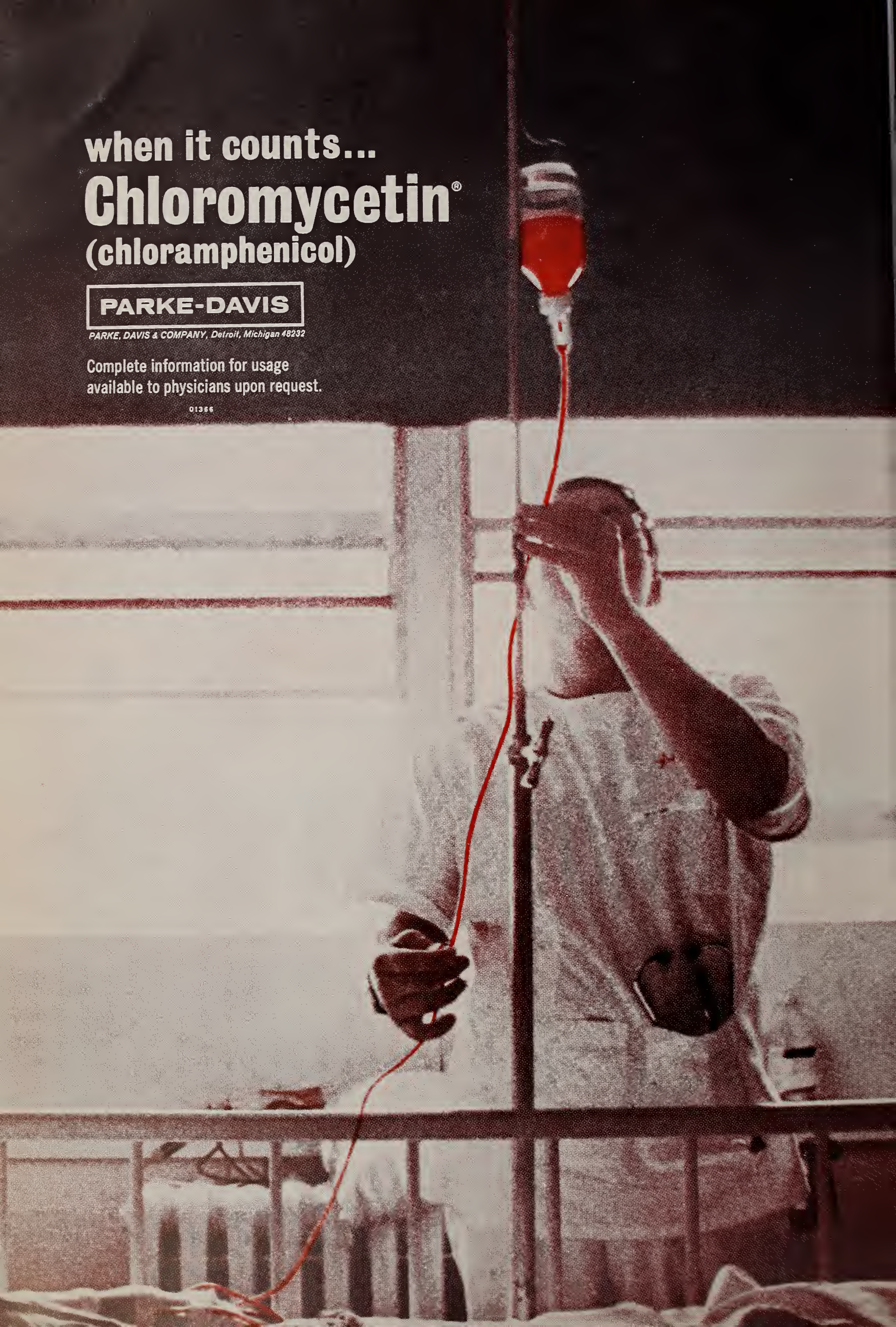
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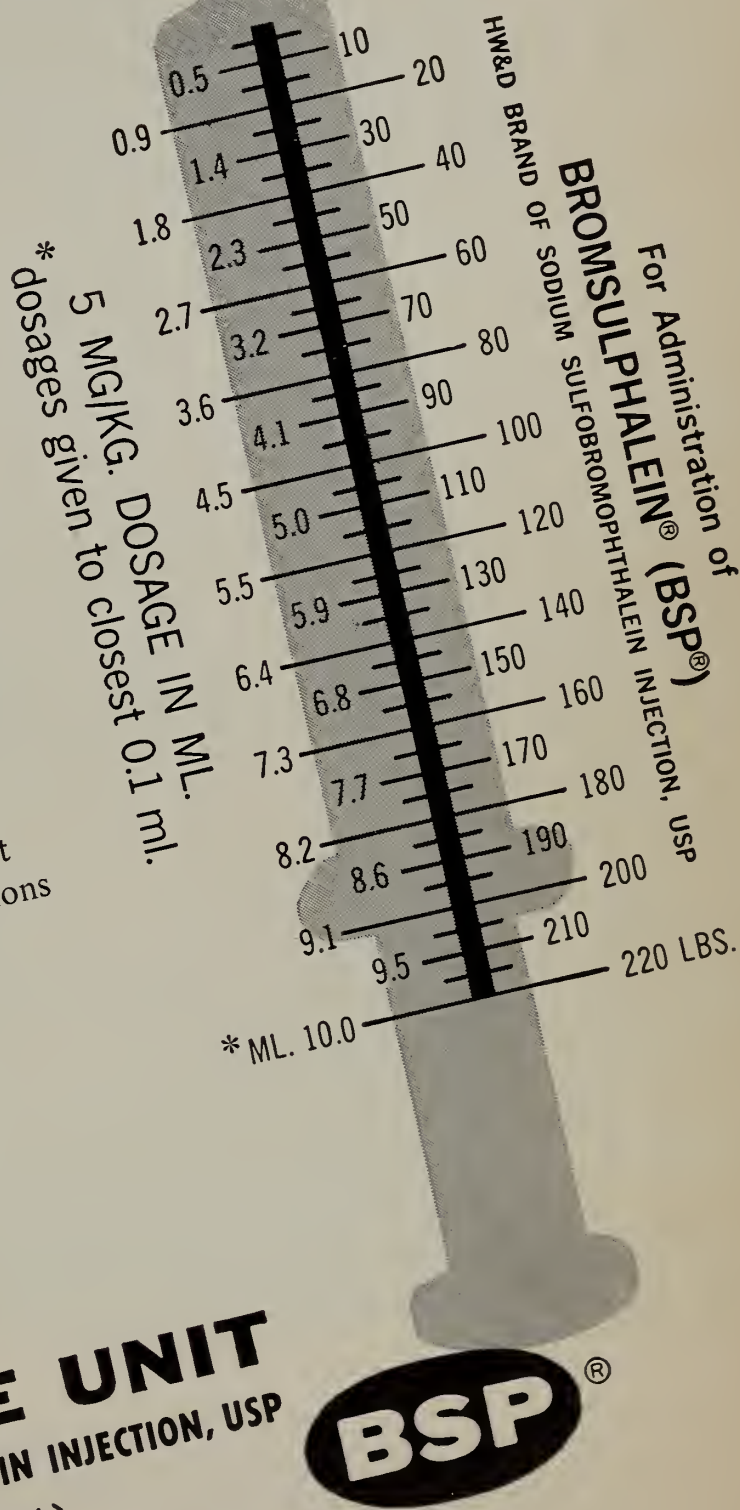
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JOURNAL OF THE SOUTH DAKOTA STATE MEDICAL ASSOCIATION
AND THE SIOUX VALLEY MEDICAL ASSOCIATION

Volume XX

February, 1967

Number 2

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FACIAL SCARS

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The objective of scar revision is the correction of wound defects such as depressed, raised, uneven, widened, hypertrophied, contracted or pigmented scars. This is achieved by excision of the offending scar and coaptation of the wound edges to provide minimal disfigurement. A great multiplicity of techniques have been proposed to obtain these results, many of which are not in accord with the basic concepts of tissue repair.

In 1947 Straatsma⁶ stated that "surgical perfection per se is not the complete answer to obtaining fine scars." This concept was furthered by Covarrubias^{3, 4} in 1954 when he demonstrated improved scars by changing the direction of the excised scar. Multiple interdigitating triangular flaps oriented in the direction of the skin tension lines were used to achieve this improvement. In 1959 Borges^{1, 2} reported his experiences using the above technique and coined the phrase "W" plasty. Other authors have expressed the opinion that ultra techniques of repair offer little advantage for their accomplishments are obliterated by the process of wound repair. The above authors have alluded to the importance of redirecting the course of the altered scar so its components more nearly parallel the predominant expression lines.

The present feeling regarding scar revision is one of attempting to redirect the course of mal-aligned scars so they more nearly coincide with the direction of the skin cleavage planes in the area. In addition to directional re-alignment, one must use the fundamental techniques of a traumatic tissue manipulation during the surgical procedure followed by a rigid program of post operative wound management.

The first question to be resolved is when is it necessary to change the direction of a scar in question. This is indicated when the course of

the scar and the skin lines are at variance with one another. The corollary of the above statement is to say that it is unwise to perform any of the following redirection maneuvers when the scar exactly falls in the correct skin line plane. In fact, it is rather unusual to be called upon to revise a scar that follows a wound that has occurred in the direction of the skin lines, providing the original defect was properly closed.

Generally speaking, wounds that occur perpendicular to the plane of the underlying musculature will coincide with the dominant skin lines in the area because the contracture of the muscle causes a shortening of the overlying skin and therefore produces the characteristic skin lines. It then becomes obvious that the two edges of such a scar are literally held together that occurs parallel to the underlying musculature in the area. On the contrary, a wound that occurs parallel to the underlying musculature will produce a scar whose length will be shortened by muscle activity. A newly formed scar is a semi-rigid structure and it is believed, at least from the clinical standpoint, that the longitudinal shortening produced by muscle contracture is accompanied by transverse widening. An analogous situation could be produced by placing a cigar-shaped piece of putty in a vise and closing the vise for a short distance.

If the above mechanism of formation of unacceptable scars is correct, then the management of such scars by simple excision and closure will probably fail to produce the desired results because the basic biomechanics of the wound remain the same. The best known way to relieve the scar from the adverse effects of the underlying parallel muscle activity is to change the direction of the scar so that it more

The application of the "Z" plasty to any one scar situation requires more planning than the use of the "W" plasty in that the former may be used as a single large "Z" or as multiple smaller figures, both of which will alter the direction of the scar, although the former will produce greater scar lengthening. When planning the release of a webbed burn scar contracture involving a joint, a single large "Z" is preferred, while when applied to the redirecting of a facial scar, multiple smaller components are usually most desirable.

The "Z" plasty has an advantage in that there is very little normal tissue discarded, while the "W" plasty requires that a small amount of normal skin be excised from either side of the mark in question. The "W" plasty has the advantage of being the most simple to apply to any one scar defect because of the routine fashion with which it is planned (fig. 3). Regardless of which of the two above maneuvers is

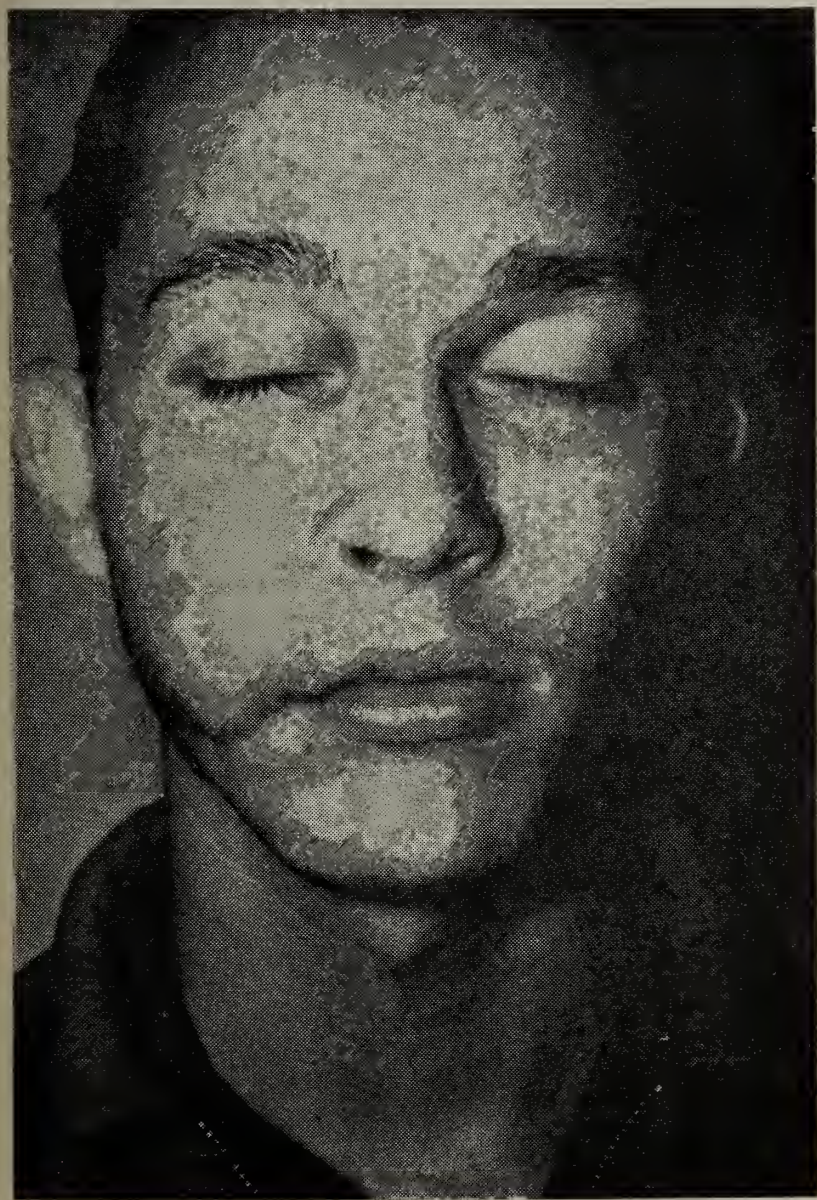


Figure 3a

Transverse scars of the cheek as a result of an automobile accident. Notice width of the defect believed to have been produced in part because the scar overlies and parallels the buccinator musculature of the cheek. The swelling is due to a parotid duct injury, which was later fistulized into the mouth surgically.

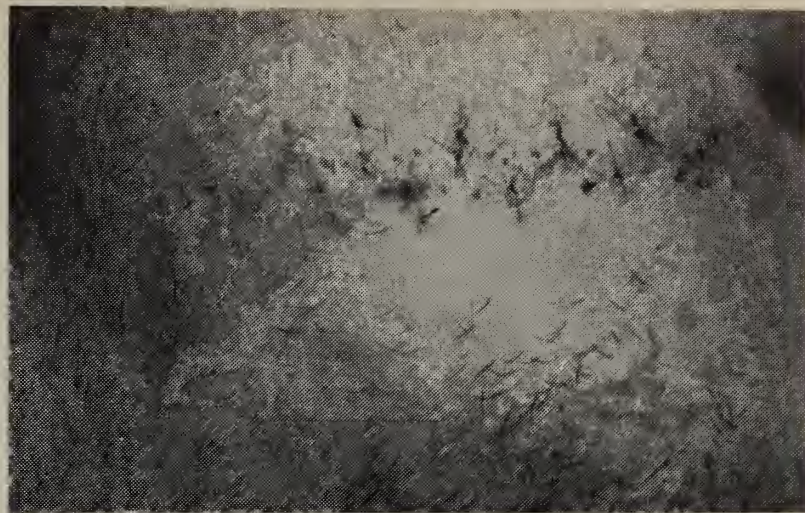


Figure 3b

Following resolution of the parotid problem and the facial induration, the scar was excised and closed using the "W" plasty technique. This is the appearance of the wound on the seventh post-operative day. Note the use of fine monofilament suture material. One half of the sutures had been removed before this picture was taken. Splinting adhesive strips were worn for three weeks after suture removal.



Figure 3c

Result three months post "W" plasty.

chosen for any one scar revision, either will change the direction of the defect and thus relieve the lateral expansion forces that seem to be placed on a healing wound that parallels the musculature of that area. The breaking up of a single mal-directed scar into a series of smaller, although connected, daughter segments forms a zigzag defect, which latter defect can act as an accordion as the underlying muscle action tends to shorten it end to end. The apparent accordion-like activity of such a revised scar seems to better dissipate the heretofore lateral expansive forces and thus alleviate the tendency for wide scar formation.

The surgical techniques used in scar revision are so basic as to hardly deserve mention. Planning the proposed procedure using some marking ink, such as Bonnie blue, will often prevent a series of incisions from being made in the wrong direction. Suitable skin edges for repair

are made by holding the knife at right angles to the skin when making incisions. Complete removal of all superficial and deep scar tissue with accurate hemostasis and tissue re-approximation is important. Dead space should be avoided in the wound to discourage hematoma formation and fine gauge non-reactive suture material should be used to prevent excessive granuloma and wound reactivity. It is important that the skin edges be widely undermined to reduce wound tension during the acute healing phase. Wound tension should also be lessened by the application of a suitable dressing.

The choice of a suitable suture material is an important facet in the management of unacceptable scars. Fine white silk, usually 00000, is used to tie bleeding points and to re-approximate the deeper layers of the wound, such as the facial musculature and the subcutaneous tissues. In situations where there is much tension on the wound edges, the use of a fairly heavy (26 to 28 gauge) stainless steel monofilament wire in the deeper layers of the dermis is a very useful adjunct. This technique has the advantage of allowing the suture material to remain in the wound for prolonged periods (two to four weeks) before its removal becomes necessary (figs. 4a-4d). This prolonged period of suture retention allows the wound to more firmly knit before being subjected to the various forces that characterize the area in question. The period of wound rest may be augmented to some degree by the application of some form of adhesive plaster to the skin to lessen the intensity of traction (wound separating) forces to which the suture line may be subjected. Dressings per se will be discussed later.

Fine nylon suture is preferred for the skin closure proper in most instances. This material is a monofilament with a smooth surface and is almost inert in the tissues. True allergic reactions to nylon must be rare and it does not tend to conduct surface moisture into the depths of the wound. The smooth surface mitigates against the introduction of bacteria into the tissues at the time of suturing and its removal is probably less painful because of the polished exterior. Nylon skin sutures may be left in situ for prolonged periods without production of significant tissue reaction and they tend to be less reactive when subjected to exposure to saliva or nasal secretions. The author prefers this material also because the tension on the wound can be adjusted by slipping the second

knot, even when a true square knot is employed. The above listed qualities for this material should not be taken as grounds for discarding all the other synthetic suture materials now available, because the great majority of them possess the same qualities to a greater or lesser degree.

Timing of suture removal is not felt to be a critical issue if a proper dressing is applied, if the sutures are tied so as to just approximate the wound edges and if one of the new synthetic strands is used. This is because of the lack of tissue reaction to these substances. If the wound has been adequately splinted by the dressing, it is customary to leave face-skin sutures in place from five to seven days, although eyelid sutures may be removed in three to five days. Very fine plain absorbable suture has been used in the eyelids of children to diminish the psychic trauma to all concerned at the time of "suture removal." Granted, the wound may be somewhat more reactive for several weeks, but this reactivity usually subsides without sequella.



Figure 4a

Post-automobile accident laceration in a 21 year old dental assistant. The wound edges were excised prior to closure.

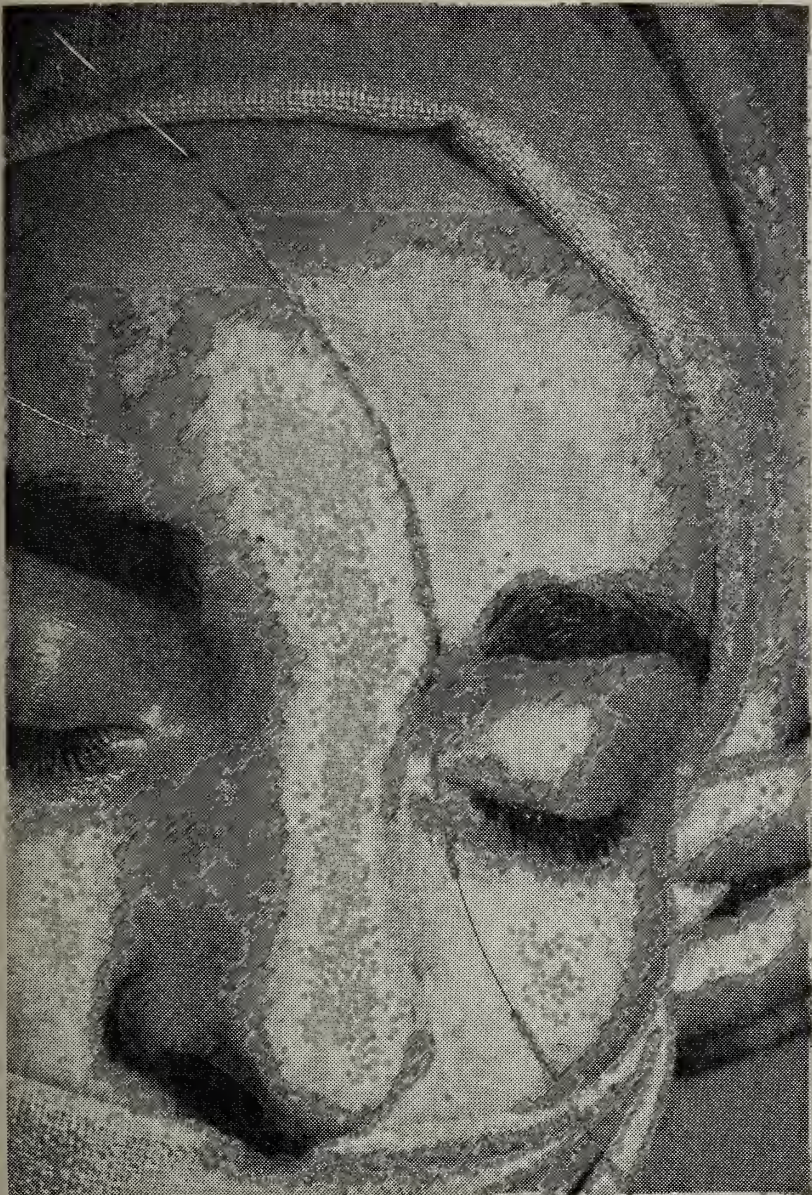


Figure 4b

The subcutaneous tissues have been closed with fine absorbable suture material. A twenty-eight gauge stainless steel wire has been used intra-dermally for skin closure.



Figure 4c

"Butterflies" are used to help splint the wound after the removal of the initial operative dressing which had been left in place for one week. The wire suture was removed after the third week.

A proper dressing should allow any wound discharge to be excreted and easily absorbed. The dressing should not adhere unduly to the sutures and make dressing changes difficult. All these properties can be achieved by using

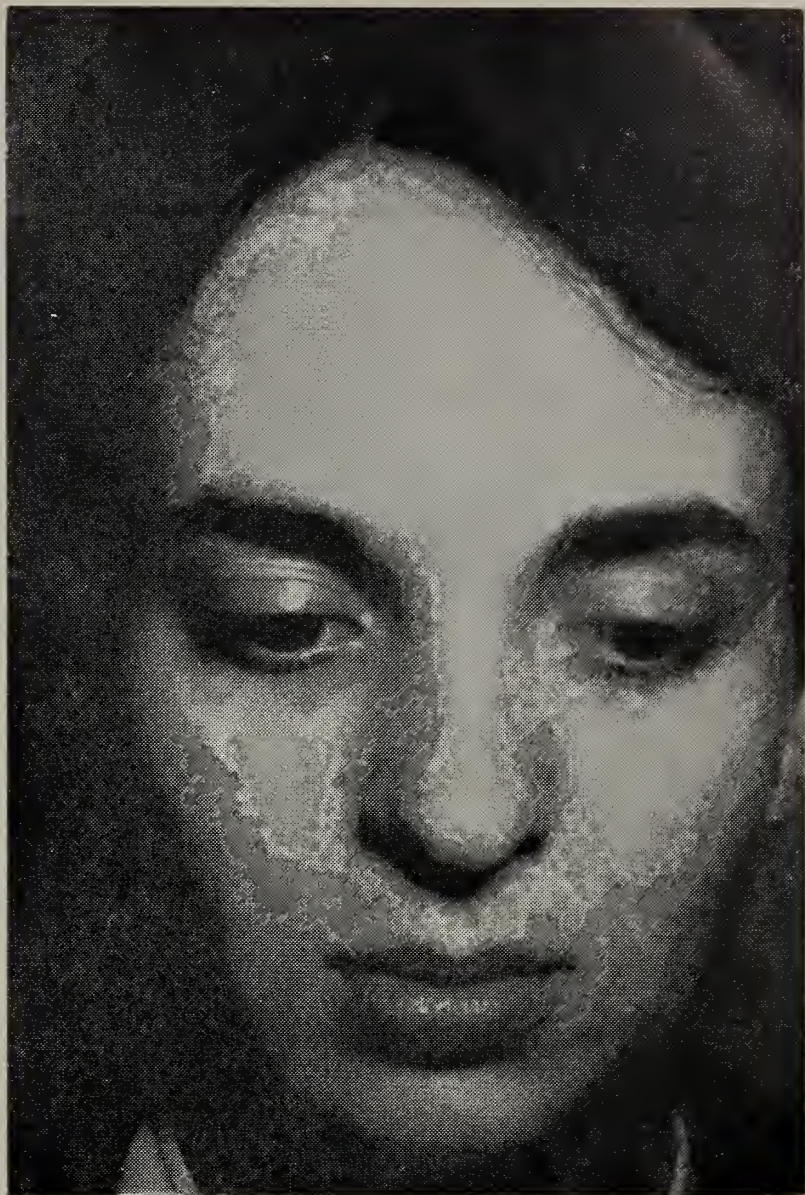


Figure 4d

Result at six months after the injury.

a narrow strip of Adaptic (R) gauze (preferably impregnated with Furacin Topical Cream (R) to facilitate the adherence of the Adaptic to the suture line until the remainder of the dressing can be applied), covered by an equally narrow strip of cotton gauze (as cut from the heel of a "four by four"). The entire wound periphery is then painted with Tincture of Benzoin and multiple strips of one half inch adhesive are then laid over the narrow gauze strips while the two wound edges are gently held together. If this latter step is done correctly, all lateral tension is removed from the wound and the sutures placed then have only to hold the wound edges in the correct vertical relations. From seven to ten layers of adhesive should be used so as to form a plaque over the incision, which plaque-like mechanism prevents outside forces from disturbing the healing wound. The patient should be encouraged to refrain from excessive facial motion such as chewing, talking, laughing, et cetera. This dressing should be left undisturbed for about one week, after which time the sutures can be removed, but the wound

should be resplinted for an additional two to four weeks using either a formal adhesive dressing or "butterflies." After this time the area should then be massaged gently with some bland lanolin bearing cream, such as Nivea (R), until the reactivity subsides, which is usually two to five months. There may be a beneficial effect from having the patient take some form of citrus fruit daily, so as to insure sufficient ascorbic acid for normal wound maturation.

There are both local and systemic factors that may impede healing, and therefore predispose to the formation of excessive scar deposition. Uremia, uncontrolled diabetes, anemia, hypoproteinemia and scurvy are examples of systemic wound healing deterrents, while necrotic tissue, foreign bodies, dead space, hematoma and excessive mobility are some of the local factors that interfere with normal repair.

SUMMARY

1. Wounds that occur parallel to the normal skin lines seldom require re-operation, providing the edges were properly sutured initially.
2. Wounds occurring parallel to the underlying musculature, and therefore perpendicular to the skin lines in the area, should be revised not only using atraumatic surgical technique with fine suture material, but should be broken up into a series of connected segments whose individual axis no longer parallel the underlying musculature.
3. A dressing applied to reduce wound tension and mobility along with prolonged post operative splinting are important.
4. Both systemic and local factors influence wound repair.

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JOHN F. BARLOW, M.D.*

Pathologist — Editor



ROBERT E. VAN DEMARK, M.D.**

M.S. (Orth. Surg.)

Orthopedic Surgeon — Discussor

This 16-year old Caucasian female was referred for pain in the left knee of three months' duration.

The pain was worse on motion, especially on running or stopping. She had no fever or joint swelling and no pain in other joints. There was no weakness, weight loss or other generalized symptoms.

Past medical history and review of systems was not contributory. Family history was negative for bone disease or malignancy.

Physical examination revealed a well-developed, well-nourished white female in no distress. Vital signs were normal. Examination of head, neck, chest, and abdomen was unremarkable. Neurologic examination was negative.

There was a small area of tenderness on the lateral aspect of the left knee just superior to the joint in the area of the lateral femoral condyle. There was a suggestion of a prominence in the area. There was good range of motion in the knee and no other tenderness or accumulation of fluid.

Hemogram showed hemoglobin of 12.6 gms%, hematocrit of 39 vol%, WBC 10,400/mm³ with 63% segmented neutrophils, 1% neutrophils, 4% eosinophils, 1% basophils, 30% lymphocytes, and 1% monocytes. Urinalysis revealed slightly turbid dark yellow urine with pH 6.0, specific gravity 1.025 and 1+ protein. There was no sugar. Sediment showed 4-7 WBC, rare RBC and some squamous cells and bacteria. Serum calcium and phosphorus were within normal limits.

X-rays showed a lytic lesion of distal left lateral femoral condyle.

An operation was performed on the second hospital day.

CLINICAL DISCUSSION

Dr. Robert E. Van Demark: In summary we have a 16-year old white female who has pain

over her left lateral femoral condyle. There is no evidence or clinical history suggestive of involvement of the adjacent joint or systemic symptoms of any kind. I wonder if Dr. Breit would like to discuss the x-rays.

Dr. Donald H. Breit*: You can easily see this lesion of the lateral side of the lower femur extending into the condyle and across the metaphysis into the distal diaphyseal region (Fig. 1). I don't see any associated soft tissue change; the margins are fairly distinct in that region. There is slight suggestion that there may be a little loculation but it's not very definite. We should be first interested in whether it is a primary or secondary lesion. It is, of course,

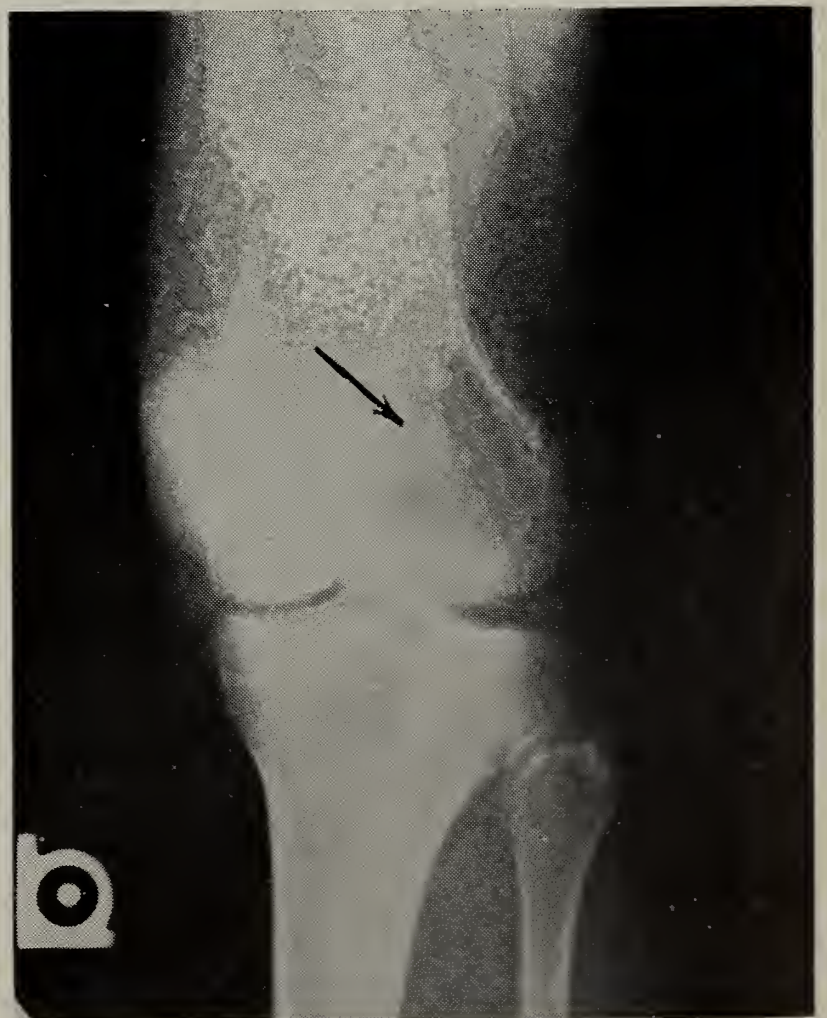


Figure 1

Eccentric osteolytic defect at epiphyseal region in distal femur.

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**Professor of Orthopedic Surgery, School of Medicine, University of South Dakota.

* Radiologist, Sioux Valley Hospital.

most unlikely to be secondary since the patient is only 16 and the location would be unusual for a metastasis. The location, however, does not completely rule out a metastatic lesion since metastases may occur in any part of any bone. I think the lesion is most likely a primary benign bone tumor. A few years ago I would have probably rather quickly called this a giant cell tumor but more recently there has been so much controversy over giant cell tumors I am beginning to wonder if such an entity exists. There have been six or more new lesions of bone with giant cells described since 1942 and this could be any one of them. There is either bone destruction or these could be principally cartilage elements that we see. Also this might represent a developmental arrest such as fibrous dysplasia or a hamartoma. It has some of the characteristics of a solitary cyst but the location is against it. They are more usual in the diaphyses. We most commonly see them in the distal femur, proximal tibia, proximal humerus or distal radius. This patient had pain in the leg so there was some activity in the lesion within the past two or three months. There is no evidence of a pathological fracture. If this were a fibrous dysplasia or hamartoma there wouldn't be any reason for pain unless there had been a pathological fracture which could occur from the weakness of the bone caused by destruction in the area.

Dr. Van Demark: Thank you, Dr. Breit. The x-ray shows a lytic lesion of the lateral femoral condyle that appears to involve primarily epiphysis with extension into the metaphyseal area. It is eccentrically located. There is no surrounding sclerosis of bone and there is no periosteal reaction. The outer cortex of the bone is not involved. A differential diagnosis then fundamentally involves those tumors and tumor-like lesions peculiar to the ends of the medullary cavity of long bones and not primarily of the cortex.

As Dr. Breit mentioned, I think it an excellent possibility that this case is a giant cell tumor despite the fact that the patient is only in her second decade. The highest incidence of giant cell tumors is in the third decade. The eccentrically placed lytic lesion is rather characteristic of a giant cell tumor particularly when it appears to involve primarily the epiphysis as it does here. There are both benign and malignant giant cell tumors. Certainly on these x-rays there is no evidence of malignancy. However, we have to remember that even in some

giant cell tumors which have metastasized the histology and x-ray picture appear benign.

I would be remiss if I did not mention in addition to a giant cell tumor, a benign chondroblastoma, sometimes known as a "Codman's tumor." About 80% of these occur in the second decade. This usually shows a distinct margin of sclerosis about the edge of the lesion. It involves the epiphyseal area primarily and may show calcification within the tumor.

The third lesion that I would consider is that of a chondromyxoid fibroma. About 80% of these occur in patients under 30. Most of them primarily involve the metaphysis but occasionally they involve both metaphysis and epiphysis as we see in this case. If treated by curettement alone they have a tendency to recur even if they are not malignant. In these cases it is advisable to excise as much adjacent normal bone as possible.

Another lesion which should always be mentioned in any patient in his second decade is a unicameral bone cyst. This can be ruled out with certainty here because a bone cyst always occurs in the metaphyses or down in the shaft and does not involve the epiphysis as we have here.

Another lesion that one has to consider in a medullary lesion is an enchondroma of bone. Enchondromas of long tubular bones are rather rare; they occur most frequently in the hands and in the feet. In the long tubular bones the enchondroma usually involves the metaphyseal or distal shaft area and shows patchy calcification in a central area of rarefaction. We certainly don't have such a picture here. An enchondroma in a long tubular bone tends to become malignant as the patient grows older in contrast to enchondromas of the short bones of the hands and feet where they are practically always benign.

This brings us to the subject of possible malignancy. There are two lesions to consider in this category. First, metastatic disease as Dr. Breit has mentioned always has to be considered in any lytic lesion of bone. However, this girl has no evidence of metastatic bone disease elsewhere and it would be very unusual to have so large a lesion present as a metastasis without evidence of a primary tumor elsewhere. I do remember one lytic lesion in a patella which turned out to be the only metastatic lesion that could be found in a carcinoma of the cervix. It is important to keep metastatic disease in the back of your mind in the differential diagnosis of lytic lesions.

The second type of malignant lesion to consider in a destructive lesion of a medullary cavity is a central fibrosarcoma. It's rare and occurs in older individuals. Its aggressiveness depends on its histopathology. An anaplastic lesion often breaks through bone and invades soft tissue. I don't think this lesion is a central fibrosarcoma.

From the standpoint of non-neoplastic tumor-like lesions the orthopedic surgeon has always to think of his old friend hematogenous osteomyelitis which mimics other osteolytic lesions. This occurs in the epiphyseal or metaphyseal area but there is a little different x-ray picture with it. There is an area of surrounding bone sclerosis which we don't have in this case. Also if there is a large focus of osteomyelitis there are marked systemic symptoms accompanying it.

There is one other lesion that is rarely encountered and that is cystic tuberculosis which does occur in the epiphysis. It is usually a smaller lesion with a tendency to invade the adjacent joint. We do not have such findings here. This is a large lesion without evidence of joint involvement either clinically or otherwise. I'm going to list these lesions that I have mentioned:

DIFFERENTIAL DIAGNOSIS

Neoplastic (Benign)

1. Giant cell tumor
2. Benign chondroblastoma
3. Chondromyxoid fibroma
4. Unicameral bone cyst
5. Enchondroma

Neoplastic (Malignant)

1. Metastatic bone lesion
2. Central fibrosarcoma

Tumor-Like Lesions

1. Hematogenous osteomyelitis
2. Cystic tuberculosis

This also could always be one of the many very rare lesions of bone. For example, I have had a desmoplastic fibroma of bone which is difficult to differentiate from a low grade fibrosarcoma. However, we have followed the lesion ten years and it is benign.

To return to the lesions we have mentioned earlier, we know this case is not cystic tuberculosis because it is too large and there is no involvement of the joint or systemic symptoms. Hematogenous osteomyelitis is unlikely in the absence of systemic symptoms and surrounding bone sclerosis. The patient is not in the age group for central fibrosarcoma and the x-ray picture is not suggestive of that lesion. There is no evidence for primary malignancy nor are

there other lytic lesions of bone to suggest a metastasis.

Enchondromas of long tubular bones are rare and there is no calcification. Unicameral bone cysts occur more toward the center of the bone in the metaphyseal and shaft regions. Now if I were going to the races, I would put the odds on the horses as 60% for giant cell tumor, 30% for benign chondroblastoma and 10% for chondromyxoid fibroma. I don't think I can lose. (laughter)

Dr. Barlow: Would the patient's personal physician care to comment?

Dr. Robert R. Giebink*: My associate, Dr. H. Phil Gross, and I took care of this patient. She was a normal, healthy young lady and there was no sign of any serious illness except the lesion in the knee. The differential diagnosis is certainly very complete. I might mention a few remote possibilities: What about Gaucher's disease or one of the reticuloendothelioses? They are pretty rare in the epiphyses aren't they?

Dr. Van Demark: They occur mostly in the shaft.

Dr. Giebink: Another lesion in this age group is eosinophilic granuloma which occurs mostly in the membranous bones, ribs, or clavicle. I suppose they could occur in this location.

Dr. Van Demark: When present in a long bone they also occur primarily in the shaft.

Dr. Giebink: Our own differential diagnosis in this case was principally between a giant cell tumor and chondroblastoma. We did not consider a chondromyxoid fibroma very seriously.

Dr. Richard D. Schultz†: I would like to ask about the possibility of a metaphyseal fibrous defect or its related lesion, a non-ossifying fibroma.

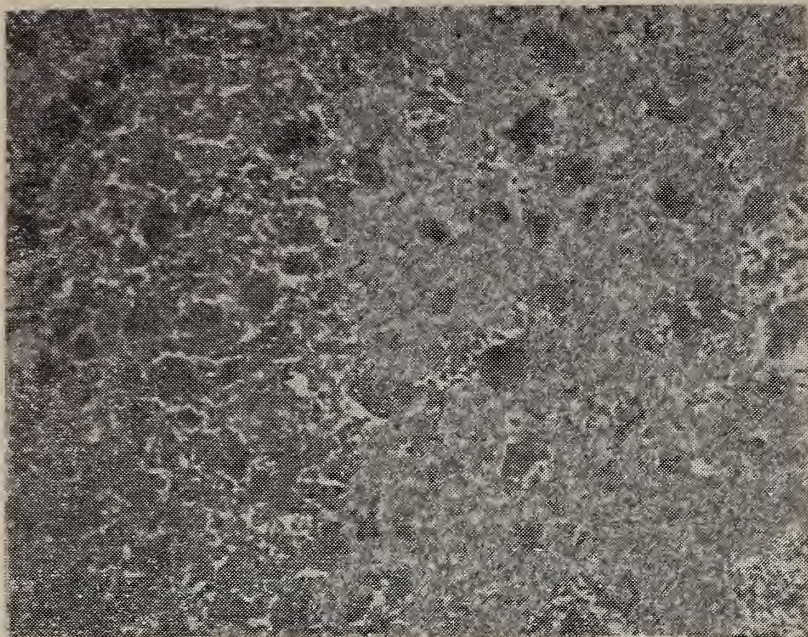
Dr. Van Demark: Non-ossifying fibroma or metaphyseal fibrous defect occurs in the metaphysis and does not involve the epiphysis primarily.

PATHOLOGIC DISCUSSION

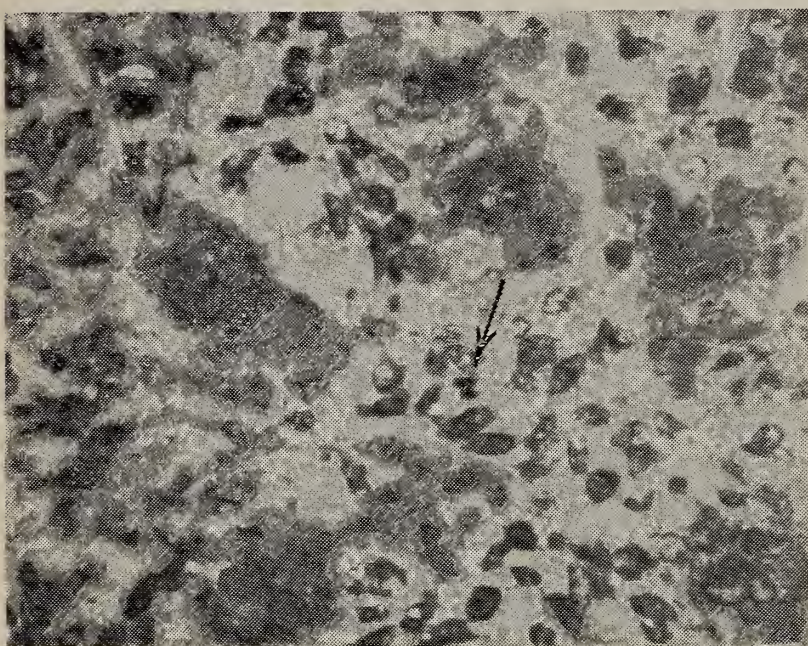
Dr. Barlow: Your betting odds at the turnstile of this clinicopathologic horse race were well-chosen. At surgery this was a solid vascular lesion which was curetted and the cavity filled with bone chips. Histologically the lesion is a benign giant cell tumor composed of an abundant cellular stroma with scattered giant cells (Figs. 2-3). The giant cells are multinucleated with nuclei similar to those of the stromal cells. Note that the stromal cells are very plump and mitoses are not infrequent.

* Orthopedic Surgeon, Sioux Valley Hospital.

† Pathologist, Sioux Valley Hospital.

**Figure II**

Many multinucleated giant cells with intervening plump stromal cells.

**Figure III**

Higher power to show characteristic stromal cells, one in mitosis (arrow).

As mentioned by Dr. Breit, many lesions of bone contain giant cells which in themselves are not diagnostic. In fact, every lesion mentioned in Dr. Van Demark's differential diagnosis may contain a variable number of giant cells. The important point in the diagnosis is to study carefully the stromal cells. In giant cell tumor these are plump with mitoses and the nuclei of the stromal cells are similar to those in the giant cells.

One of my professors of pathology used to say that if you take away the giant cells and there is still tumor, the lesion is a giant cell tumor. If you take away the giant cells and just fibroblasts and hemorrhage are left, you are dealing with some other lesion such as brown tumor of hyperparathyroidism or one of the other lesions mentioned by Dr. Van Demark.

I would also like to emphasize the importance of the pathologist obtaining an accurate clinical

history from the orthopedic surgeon in addition to a radiologic interpretation from the radiologist before attempting to diagnose any lesion of the bone. Histology alone is not sufficient to differentiate among many bone lesions.

I have reviewed several large series of giant cell tumors from the literature. Several points should be stressed: (1) It used to be thought that a giant cell tumor under the age of 20 was a rare lesion but in the series of Hutter et al² 19.9% of the cases were below 20 while 77% of them occurred between the ages of 20 and 49.

(2) The lesions of the jaw containing giant cells should be excluded from the discussion of giant cell tumor. The jaw lesions are benign and rarely recur. They are better referred to as giant cell reparative granulomas. With the exclusion of these, most giant cell tumors occur in the distal femur, proximal tibia and distal radius. They may, of course, less commonly occur in virtually any bone.

(3) If the lesions of the jaw are excluded giant cell tumor becomes a much more aggressive disease. Well over 50% of the cases in many series will exhibit at least one recurrence and up to 30% may recur more than once before cure. The recurrences that are cured are usually (81%) within the first two years.

(4) About 10-30% of giant cell tumors may be malignant according to Hutter et al and Murphy and Ackerman.⁴ The malignant change may be present in the first biopsy specimen or may develop over several years. In the above series of 76 cases 23 were malignant, 8 of which were malignant on the first biopsy, 7 showed malignant changes developing in benign lesions over 1-5 years, and 8 showed malignant changes developing after 5 years in an originally benign lesion.

(5) Marked variation in cellular and nuclear features of the stromal cells is the most accurate criterion for the histological assessment of malignancy in giant cell tumor. The giant cells are usually fewer and have fewer nuclei. Areas of cartilage or osteoid are also features of a malignant giant cell tumor. However, even so-called "benign" giant cell tumors have been known to metastasize. As indicated, benign giant cell tumor of bone is an aggressive lesion with a high recurrence rate and a definite predilection for malignant change.

Dr. Richard J. Weaver*: Dr. Van Demark, didn't you report a recurrent giant cell tumor at one of our previous clinicopathologic conferences?

* Pathologist, Sioux Valley Hospital.

Hasn't there also been a recent paper from the Mayo Clinic recommending more radical surgery for these lesions?

Dr. Van Demark: About a year and one-half ago we reported in this journal⁶ a recurrent giant cell tumor at the lower end of the radius. In that case we excised the end of the radius and replaced it with a graft from the fibula. This patient was in the office recently and I took out one of the screws placed at the time of surgery. She is doing very well and has a normal appearing wrist and hand which she uses quite functionally. We are protecting it with a brace until the fibular transplant becomes entirely well-vascularized but I think it's going to be an excellent result. This is a case which had recurred once following curettement. That brings up the second point about the recurrence rate in giant cell tumors. The present trend is toward more radical excision if technically feasible primarily because of the high recurrence rate. I believe Dr. Weaver has in mind the publication of Dr. Dahlin in which he reports a recurrence rate more than 50%.¹ Because of the high recurrence rate with curettage, the surgeons at the Mayo Clinic have come to regard this method less favorably. I am entirely in agreement with the treatment given in this case and I think I'd do exactly as Dr. Giebink did. I believe the treatment was good and I believe in the lower end of the femur this is the treatment of choice.

Dr. Giebink: Dr. Gross and I have had several giant cell tumors in the past three years. We believe the initial treatment should be curettement and replacement by bone chips. If there is recurrence the surgeon is then presented with the difficult problem of deciding what to do next — replacement as Dr. Van Demark did, repeat curettement, or radiation. We have had one giant cell tumor in a metacarpal which recurred twice but has not recurred for 2-3 years now after the third curettement.

Sometimes radiation may be effective in these lesions. Dr. Breit may want to comment on this. However, I feel that if you are going to curette the lesion you should leave the radiation for later. If the lesion recurs I favor trying to replace as much of the whole bone as technically feasible.

Dr. Van Demark: I agree. When I first practiced orthopedic surgery, radiation was used for quite a few of these lesions. In my experience it has often given quite satisfactory results. Often 3 to 4 weeks after irradiation of a giant cell tumor,

the lesion will appear to have turned malignant but it will usually then go on to recalcify. The point is not to become discouraged too easily if the lesion appears to be progressing soon after irradiation.

Dr. Breit: In the past we have treated several giant cell tumors by irradiation with success. In general I do not recommend it as the treatment of choice. However, there may be a place for radiotherapy in giant cell tumor, particularly the malignant ones.

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THE SIMPLE LABORATORY TEST

Is there a simple laboratory test?

If so, it must be rare. Certainly many tests may seem simple if the observer or the person working at the bench is ignorant of all of the pitfalls that accompany every manipulation.

As an example, let's explore hemoglobin determinations. This has been a frequently performed analysis since Gowers introduced the first method in 1878. The number of papers written on the subject since that time is astronomical. Yet just what is the present status of performance of this commonest of all tests? In 1963 a total of 398 laboratories returned results of their analyses of a hemoglobin solution.¹ Iron analyses of the sample yielded a calculated value of 15.9 Gm. of hemoglobin per 100 ml. of blood. The mean value of the returns was 15.7 Gms. Only two-thirds of the reporting laboratories obtained values between 14.9 Gm. and 16.5 Gm. Values as **low** as 10.5 Gm. and as **high** as 18.6 Gm. per 100 ml. were reported. In view of this, even though it **looks** simple to see a technician perform a single dilution and read the result from a scale on a photometer, it would certainly be erroneous to imply that determination of hemoglobin is a simple test.

An advertisement for Bromsulphalein (BSP) uses the provocative phrase "and is an extremely simple test to perform." This extremely simple test has resulted in a number of deaths. After eleven years experience with administering the dye it appeared to this writer that such reactions always occurred elsewhere. Amidst complacency two severe reactions were encountered following its use in one month. After such experiences would not the phrase "potentially dangerous test" seem more appropriate? According to Dr. McGath² who has supervised over 200,000 of these tests, it is **not** a simple one.

Some of the potential traps in performing simple tests might be elusive to the most sagacious chemist. Even the method of transportation of the specimen to the laboratory is hazardous. The quickest way is not always the

best. For example, pneumatic tube transportation of blood interferes with determinations of hemoglobin, serum LDH, and serum potassium.³ The simple hematocrit is markedly altered when it is determined on blood taken from a vacuum tube which has been only partially filled.

What about the many "dip sticks"? In some instances, the various ribald comments overheard in the laboratory seem appropriate. In a recently published article numerous problems resulting from the estimation of blood urea nitrogen by a currently popular "simple test" are pointed out.⁴ Indeed, a paradox exists when on one hand knowledge and instrumentation have shown such rapid and spectacular advances and on the other tests are offered which give imprecise and even misleading results. Moreover, hospital administrators and practicing physicians could be misled into the idea that the well appointed laboratory consists of a bag of variegated bits of paper.

If such problems are encountered in the "simple tests" the more complicated tests can be traumatic indeed for the technologist; and most hazardous to the physician and his patient. "It is high time to stop misleading the public and the physician about laboratory tests. None is simple and certainly none is extremely simple. They are all involved, complicated, and full of pitfalls and possible inaccuracies clear down to the written report on the patient's history. It takes a clear appreciation of these many possible errors and a long period of training and experience in order to master laboratory procedures to an acceptable level."²

The responsibility for maintaining good clinical laboratories, of necessity, resides within the medical profession. Pathologists are clearly those most responsible; however, the full understanding and cooperation of all medical groups are essential to maintaining excellent laboratory medicine standards. Indeed, it is just as important to send the patient, the patient's blood, or other biological sample to a properly supervised laboratory as it is for the patient to see a properly trained physician in the first place.

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DEFINITIVE SYPHILIS SEROLOGY

In 1907, Wassermann modified the complement-fixation test of Bordet to detect syphilis antibody, or reagin, in the serum of infected humans.¹ Since that time a large number of complement-fixation procedures have been developed. Of these the Eagle and Kolmer tests are still in use. With the discovery that an alcohol-soluble lipid from beef heart served equally as well, Wassermann's original antigen, extracted from syphilitic livers, was no longer used. A second group of tests has been developed that use a particulate cardiolipin antigen and are flocculation rather than complement-fixation tests. Among these are the Hinton, Kline, and VDRL tests. The VDRL is most widely used, particularly as a screening test for syphilis.

Following the early application of serologic tests for syphilis it became apparent that a certain percentage of sera gave "biologic false-positive" reactions. These reactions occur following a number of febrile illnesses and immunizations, notably smallpox vaccination, and are usually transient. Persistent biologic false-positive reactions with cardiolipin antigen are found in chronic degenerative diseases and may sometimes be more important than a true positive reaction, for example in dysproteinemia and lupus. Occasionally even the sera of normal healthy individuals will give a false positive reaction. For this reason, before a positive test result is accepted it should be confirmed with a different type of reaction. Since the antigen employed in most tests is cardiolipin, these tests differ only in **sensitivity** rather than **specificity** and the problem of false positive reactions is not always resolved. This is particularly obvious when the same serum is tested by two methods with varying results or when positive reactions are not compatible with the history and physical findings.

The Reiter Protein Complement Fixation test (RPCF)³ has the virtue of marked increased specificity due to the use of an antigen that is treponemal in origin. This increased specificity is effective in ruling out many false-positive reactions. Some problems of sensitivity with the test, however, have been encountered.

With the introduction of the **Treponema pallidum** Immobilization test (TPI), Nelson² was able to demonstrate the difference between the true syphilis antibody and reagin responsible for false-positive reactions. This great increase

in specificity for syphilis antibody is due to the use of a strain of **Treponema pallidum** as test antigen instead of cardiolipin. The TPI test involves the use of motile treponemes recently extracted from infected rabbit testes. The organisms can be seen to lose their motility when syphilis antibody and complement are added to the preparation. This is a microscopic determination. Complement with normal serum does not affect motility. This test, although technically difficult, is accurate to a marked degree.

The Fluorescent Treponemal Antibody test (FTA) is another method for testing serum for syphilis antibody.³ The antigen is essentially the same as that used in the TPI although the treponemes are not alive at the time of testing. In this procedure, the serum under test is added to previously fixed smears of **T. pallidum**. During incubation, syphilis antibody from positive serum will coat the treponemes. The presence of this antibody is determined by counterstaining the slide with fluorescein-labeled anti-human globulin. When examined microscopically, using a darkfield condenser and strong ultra-violet light source, positive slides are seen to contain brilliantly fluorescing treponemes. Slides made with negative serum contain treponemes that do not fluoresce and are difficult to visualize.

Both the TPI and FTA tests are specific for syphilis antibody. They are equally accurate in distinguishing false-positive reactions to cardiolipin antigen. Neither is suited for routine screening for syphilis.

Because the TPI test requires a constant course of infected rabbits to supply the viable antigen, it has not been found suitable for the average serology laboratory. The FTA test is more frequently used because of lesser technical difficulties and availability of commercially prepared reagents.

For a routine screening procedure for syphilis the VDRL and other flocculation tests are adequate when reactive sera are confirmed by any of the more sensitive complement-fixation tests. When biologic false-positive reactions are suspected or when results of two different tests are not consistent, definitive serological procedures are indicated. Because of its increased availability, the FTA test is more frequently used.

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TREATMENT OF HYPERTENSION WITH COMBINATION THERAPY*

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Since the advent of the thiazides in 1958 they have attained a position as the basic therapy for many forms of hypertension. The dominant action of hydrochlorothiazide is to increase the excretion of sodium and chloride and an accompanying volume of water through inhibition of tubular reabsorption. This decrease in plasma volume plus the peripheral vasodilatation which occurs with long term use of the thiazides accounts for its reduction of blood pressure.

Hydrochlorothiazide alone is not always adequate to control the hypertension and it therefore has frequently been used in combination with other drugs. Ganglionic blocking agents have often been used in the past; however, since guanethidine has been available (February, 1959), the blocking agents have been used less and less frequently. Guanethidine lowers blood pressure by inhibiting sympathetic vaso-

motor tone without interfering with parasympathetic function, resulting in fewer side effects than are obtained with ganglionic blocking agents. For moderately severe forms of hypertension which have not responded to the thiazide drugs alone it has been common practice to employ hydrochlorothiazide and guanethidine in separate tablets. Combined therapy allows effective use of smaller doses of the more powerful agents, and therefore reduces the incidence and severity of side effects. Average reductions in pressure induced by the different agents are approximately additive when they are combined.

Because of the desire to simplify the patient's medical regime, to decrease the possibility of missed doses of medication, and to decrease the over-all expense to the patient for his long term and usually continual medical therapy, a combination of hydrochlorothiazide, 25 mgs., and guanethidine, 10 mgs., was made available for experimental use in June, 1965.

* A six months study of Esimil in the treatment of hypertension in thirteen patients in the moderately severe group.

Between June and December, 1965, thirteen patients were evaluated on this combination, called Esimil* by its manufacturer. No patient was put on the drug who had had a satisfactory or excellent response to his or her prior anti-hypertensive therapy, consequently the patients were either newly diagnosed and had had no prior therapy, or their response to their prior therapy had been less than adequate. The only other selection of patients was the fact that it was necessary for them to be seen at least every two weeks in the office for evaluation of their blood pressure in the sitting, supine and standing positions and for indicated laboratory tests.

The patients' ages ranged from 42 to 76 years. Eight of the patients were male and five were female. Nine of the thirteen patients had essential hypertension. One had chronic bilateral renal disease with bilateral nephrolithiasis. Three patients had previously had one kidney removed for reasons other than hypertension. One of the latter was a 76-year old woman, another a 57-year old male and the third, a 45-year old woman.

* Esimil was supplied by CIBA Pharmaceutical Company, Summit, New Jersey.

Therapy was initiated with from one to two tablets daily depending on the severity of the patient's hypertension and the type of therapy having been employed prior to institution of Esimil therapy. No adverse reactions developed while shifting from their prior therapy to Esimil. Six had been on no prior therapy; two had been on rauwolfia preparations alone; one took a combination of Aldomet, Hydrodiuril, Ismelin and Apresoline in high dosage; another took Inversine, 10 mgs. q.i.d. with Hydrodiuril, 100 mgs. daily and a third had been on Apresoline, 200 mgs. daily and hydrochlorothiazide, 100 mgs. daily. Control had been inadequate in all instances in which medical therapy was being employed at the time of change to Esimil therapy.

Refer to Table #I for patient information.

The response to Esimil therapy was classified as excellent in four of the nine with essential hypertension indicating that the blood pressures had fallen to acceptable and/or normal range with moderate and well tolerated doses of the medication. One who was classified as a good response at the end of the six months' study had obtained an excellent response during the sub-

TABLE I

Pt. #	Age in Yrs.	Sex	HBP Known Yrs.	Complications	Previous Therapy	BP before Rx	
						Supine	Erect
1	57	M	9	arteriosclerosis obliterans; iliac saddle thrombus; Positive Masters	none	208/110	160/110
2	52	M	1	none	Hydrodiuril	160/110	158/120
3	60	F	15	none	Inversine; Hydrodiuril Ismelin	220/110	210/130
4	42	M	1	none	none	150/110	140/104
5	68	M	8	none	Apresoline; Hydrodiuril	160/106	130/104
6	49	F	1	none	none	200/100	214/120
7	67	M	10	none	none	170/110	194/120
8	55	M	1	bilateral nephrolithiasis	none	150/100	140/90
9	45	F	5	right nephrectomy	Aldomet; Hydrodiuril; Ismelin; Apresoline	202/120	180/100
10	70	M	6	cerebral thrombosis	Sandril	180/80	170/80
11	57	M	2	cerebral thrombosis; left nephrectomy	Hydrodiuril	200/110	170/100
12	68	F	3	diabetes	none	200/90	170/100
13	76	F	12	unilateral renal disease; probable nephrosclerosis	Raudixin	244/110	230/110

sequent two months. One patient's response was classified as good and one as fair. The drug was discontinued in two instances in those with essential hypertension because of nausea and vomiting in one instance and vertigo in the second. The response of the blood pressure had been fair in a 45-year old male in whom nausea and vomiting had necessitated discontinuation of the drug and excellent in the elderly woman in whom vertigo was prominent, and in whom postural hypotension developed. One patient who had not previously been on therapy and who had chronic nephrolithiasis had an excellent response to Esimil. Two of the patients with one surgically absent kidney had a fair response and the third a good response to Esimil. Dosage of the drug ranged from one to six tablets daily or from 10 mgs. of guanethidine with 25 mgs. of hydrochlorothiazide to 60 mgs. guanethidine with 150 mgs. of hydrochlorothiazide.

In summary, the efficacy of employing hydrochlorothiazide and guanethidine in treatment of various forms of hypertension has been well proven and the combination of these two drugs in one tablet would seem to be a logical and

advantageous addition to the armamentarium of the physician treating moderately severe to severe hypertension on an out-patient basis.

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Tabs Esimil Daily		Wks. Rx	BP after Rx		Side Effects	Results and Comments
Init.	Final		Supine	Erect		
1	3	20	170/90	140/80	none	E—continues on Esimil discontinued Rx after 6
1	6*	24	146/110	130/100	nausea & vomiting	F—mos. because of nausea & vomiting
1	6	16	230/130	160/100	heartburn	F—continues on Esimil
1	2	8	138/80	130/90	none	E—continues on Esimil
1	4	12	170/110	140/100	diarrhea	F—continues on Esimil
1	5	20	180/104	140/80	vertigo, heartburn	G—continues on Esimil
1	4	24	168/100	160/100	none	G—continues on Esimil
1	1	8	140/98	132/90	none	E—continues on Esimil
2	3	24	180/114	170/110	diarrhea if Esimil over 3 tabs daily	F—added Apresoline; con- tinues Esimil
1	1	8	150/90	130/80	none	E—continues on Esimil
2	2	12	164/104	168/118	none	F—continues on Esimil discontinued Rx after 6
1	0*	12	150/100	150/90	vertigo	F—wks. because of vertigo
1	2	8	180/80	146/80	slight vertigo	G—continues on Esimil

* discontinued therapy

DEADWOOD DOCTOR

F. S. Howe, M.D.

CHAPTER VIII

Horses and Autos

All the practice of medicine in those days was done by horse, with horse and buggy or team and buggy. After I had been here for some time, I got the mining contract to take care of the Dakota Mining Company employees. The mill was in Deadwood and the mine was at Trojan. John Hunter was general manager and later my father-in-law. He had a mine manager who was very partial to a couple of doctors in Terry and he wanted Mr. Hunter to switch to one of the other doctors. I used to ride horseback to Trojan, 11 miles each way. One day I was up in the forenoon in January and in the early evening this mine manager called me to come up and see his daughter, which made a total of 44 miles horseback just for that one contract. I went up there and asked where the sick girl was and what was the matter. She said that she had a headache, so I gave her a few aspirin tablets. I looked at the thermometer. It was 27 below.

Many, many times I rode horseback to Trojan twice a day when it was way below zero. The mine manager labored under the delusion that if he made it tough enough for me that I would quit; but in spite of the fact that I had to make two trips a day on many days, sometimes to treat fake headaches, he didn't know me very well. I stuck. He lost his job.

I believe the hardest trip I ever made was to what was known as Spearfish Cyanide. This mill and mine was situated about 8 miles beyond Trojan. The mine manager called me in the early evening and said that he had a very sick woman and asked me if I could come out. I told him if I could get a team, sleigh and driver, I would come, although there was a big storm raging.

I got the team and driver and we started out at 7 p.m. We had to go by way of Lead and Terry and after we got just a little way out of Lead we found that we were traveling up the railroad track instead of the highway. When we arrived at the foot of Trojan hill, there was an immense drift. The sleigh turned over and dumped us and all of our paraphernalia out in the snow. We had a quiet team, however, and we got everything back in and proceeded on our way. When we got to Trojan where the wind really had a chance, we could not see the road. We could only see an outline of the horses and it appeared that we might have to turn back.

The only guide we had was the telephone poles. We solved this, however, by having the driver get out and walk ahead, then call. I would drive up to where he was again. We did this until we got to Crown Hill. From there, the road was protected by timber and it was not so difficult to follow. We finally arrived at 3 o'clock in the morning, 8 hours of the hardest kind of traveling to get 18 miles. I found that the sick woman had danced all night the night before and wasn't so desperately ill as the mine manager thought. We stayed until 6 o'clock. The storm had quieted down and we had no trouble making the daylight trip. Three or four hours after we left there, we were back in Deadwood. We were gone about 14 or 15 hours. I found that Dr. Bowman, who had a fine team and was very familiar with every road in the entire territory, had started in the afternoon, turned around, given up and came home.

It had been my custom to make night trips alone with team and buggy, believing that the team would follow the highway. Sometime during the early fall of the year 1909, I was called out to a little mining camp near Galena one night and due to high water in the spring every bridge had been washed out — I think there were some fourteen bridges. I had my own horse and hired a livery horse to fill in. About 2 or 3 o'clock in the morning I was on my way home and as usual trusting the horses to follow the road when suddenly the livery horse disappeared from sight. I found that the horse had stepped right off the bank into a deep pool, taking the buggy and my horse with him. For some reason the buggy did not turn over. At first I heard wild plunging and kicking, then silence. I knew what that meant — that the horse was under water and would be drowned. I made a long jump out of the buggy and landed in water probably three or four feet deep, pulled the horse's head out of the water and tried to get him up but failed. I then let go of the horse's head, rushed back and got one trace loose then another trip to the horse's head to give him some air. A flying trip back to get the other trace loose, then after much urging I finally got the horse up on his feet, pulled the buggy out, tied the team to a tree and headed back for the place where I had made the sick call. I borrowed a lantern and some clothing from the man — believe me, that water was cold. He came out and helped me get started. The rest of the trip was uneventful, but that was the last time that I ever made a night trip alone.

There were two other trips that were interesting. One was a night trip to a farm three miles below the town of Whitewood on an obstetric case. While we had cars at this time, they were not too dependable and I hired a livery team and driver. When we left Deadwood shortly after midnight, the thermometer registered 27 below zero. We wrapped up in fur coats, hot bricks to our feet but were in the usual open buggy. When we struck the prairie country about 6 miles from Deadwood, we had a terrific head-on wind. We faced this for about 7 or 8 miles. When we finally got to the house which had a light which I assumed was the right one, little did we care whether it was the right one or not. We drove into the yard and stopped. We were both so cold that we were unable to get out of the buggy. We called. A couple of men came out of the house, assisted us out of the buggy and into the house. This proved to be the right place and as was very often the case, the baby arrived before I did. We remained for an hour or two getting thawed out and then started for home. With the wind at our backs, we had no trouble going home; in fact, did not suffer from the cold.

On one trip which was also a confinement case made during the month of January, I used four methods of transportation on the 21 mile trip. I first started out in my car with Dick Costello, the police chief, as driver. After we had made about 12 miles, we got completely hung up in the snow. We started to shovel, and it seemed almost a hopeless job to shovel out. I left Dick Costello in charge of the car with the hope that he would be able to get out and started walking with my heavy satchel toward the section house at Dumont. After I had walked about a mile, some boys came along with a team and sled. To say that I was glad to see them expresses it very mildly. I hopped into the sled and they very quickly took me to the section house. There the Burlington section boss got out his motor car and after fixing a canopy to protect us from the cold wind, we proceeded 6 miles to Nahant. Just when we left the section house, I looked at the thermometer. It was 32 degrees below zero. We made the trip down to Nahant without any difficulty and much to my disgust I found that it was a false alarm. I told these folks that so far as I was concerned, they would either bring the patient to the hospital or get another doctor, that I had made my last trip out there. They had hailed from Iowa and they proceeded to tell me how the Iowa doctors made these trips. I told them that they were

now in South Dakota and that if they wanted my services they would have to come in to the hospital. Strange to say, the baby was born about a week later and they did get another doctor to go out. At that time the weather was not so severe. The roads were plowed out and I understand that the trip was made without incident.

The transition from horseback to team and then from team and buggy to automobile, was to say the least, very interesting. My first car was a 1911 Model T Ford which I purchased in the summer of 1911. A carload of Model T's came in on the Burlington Railroad and were unloaded at the freight depot in Deadwood.

I had secured a Ford instruction book and knew it from cover to cover. The only thing I lacked was I didn't know what a carburetor was or whether it was in the rear axle or in the engine. I didn't know what a transmission was or where it was, but I had carefully studied the instruction book. I was in the same fix that the embryo surgeon is when he studies in a textbook, how to do an appendectomy but has never done one or seen one.

After the cars were all unloaded, the Ford dealer said, "These cars are all shipped with draft attached. If you will give me your check, I will appreciate it." I wrote out my check and handed it to him. We put some gasoline in the car, and he said he would spend a week showing me how to drive the car. He told me that I wouldn't have any trouble, so we got in the car. He told me to take the wheel and drive. He showed me what to do and we went down the street together coming along fine.

When we got down opposite the First National Bank, the dealer said, "Would you mind stopping here? I want to run in with these checks to deposit them. I'll be right back out. You just wait for me." I waited very patiently but so far as I know he is still in the bank. I never saw him again.

The question then was what I should do. I knew nothing about backing up. I didn't know how much room to take to turn the car around. I solved this by driving down to the lower end of town and going around the race track. I got home safely but had many thrilling and interesting experiences learning to drive the Model T. After one year of the Model T in which one didn't have power enough to negotiate most of our mountain roads, I thought I wanted a bigger car. My next car was a Mitchell, which of course had an entirely different shift than the old Model T. I naturally had plenty of trouble

getting myself adjusted to the new shift. At that time one of the famous cars was the Lozier 6 made in Detroit. About 1916, I purchased a Lozier 6, seven passenger car. This was at the time considered one of the best cars in this territory. Their only rival was a White Steamer. We arranged a road race to Sundance, Wyoming, 50 miles away, and after thousands of dollars were up on the race, the owner of the White Steamer backed out and returned the money. I used the Lozier car for a number of years. I got fine service out of it.

Among other trips that we made in this car was our first trip to Yellowstone National Park. At that time, we had five children, one of them a baby about a year and a half old. We started out with seven in our family and another man for a relief driver, together with a girl friend of the family. The relief driver was supposed to be, according to his own words, an expert driver, but after I turned the wheel over to him and let him drive for about half a block, I took the wheel over and did all the rest of the driving.

We went by way of Miles City which was a mere trail with more than 30 gates to open along the way. We were told to take our own drinking water which we did — 2 ten-gallon cans, one on each fender. We had a fire extinguisher in the car and our first adventure occurred 10 miles out of Belle Fourche and about 40 miles from Deadwood when we had a light shower. I was going along beautifully when suddenly the car started out across the prairie and ended up in a gulley where there was fortunately no water at the time. I failed to realize that a little rain on gumbo makes grease.

I put on our chains and backed up. This time I hit the bridge. The first time I missed it. After a mile or two we ran out of the rain. We had intended to make Miles City for our first night's stop. As we were going along about 20 miles possibly from the nearest house, a fire suddenly blazed up clear over the hood. I jumped out and turned off the gasoline, proceeded with fire extinguisher and water, finally getting the fire out. The relief driver started across the prairie and might be going yet if we hadn't got the fire out. This time I decided to leave the hood up and started out again but after a few miles the car was again on fire. The fire was put out without much trouble. I then cut the ground wires, leaving us without lights but with no more fires. When we arrived at Broadus, Montana, I went to a garage but the garage man said that he was not prepared to do the electrical work. We were at that time

some 90 miles from Miles City but he said that we had better have that work done at Miles City.

We got lost out of Alzada. We went 20 miles before we found anybody. We finally saw a sheep herder who told us that we had missed the turn and had to go back and start over. The garage man at Broadus told me that there was a ranch 15 miles away known as the Y-T Ranch that took in travelers. I did not want to take chances on driving after dark without lights so we proceeded to this ranch where we were well taken care of and had a fine supper and breakfast.

The following morning we left early for Miles City. The weather was extremely hot. We stopped to test our tires when we got to Miles City and found one with 120 pounds of air. At Miles City we found a good electrical shop and had our transmission wires fixed up in excellent condition. That night we made it to Billings after a hard hot trip. It was impossible to get any reservations in the hotels. We finally found a rooming house without any outside windows, merely sky lights. We slept very little that night and in the morning started out for Gardner, the Park entrance. We had to take a detour. Coming down that detour the steering knuckle came down. Of course, I lost control of the car but fortunately had good brakes. I was able to wire it up temporarily and came to a blacksmith shop where he fixed it up so that we could get by. We made it to Livingston, Montana, that night and again looked all over town for accommodations. The only thing we could find were some rooms with skylights over an undertaking establishment. The young lady who was with us asked the undertaker if any of the downstairs inhabitants would wake us up during the night. He said he thought that they were all very sound sleepers and that they would not disturb us.

We left Livingston in the early morning and drove as far as Old Faithful and all the other geysers. We completed our trip to the Park and except for the fact that most of the family got food poisoning, had a fine trip through the Park. We came out the Cody entrance and returned the same way through Montana. For some reason, the gates were not so hard to open on the way back and the trip was uneventful. Gasoline was then 50 cents a gallon, not only in the Park but all the way through the inland regions of Montana. We have made trips to the Park since but none of them had the thrill of the original trip.

(To be Continued)

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News Notes • Changes • Births • News

Pop's Proverb

Few of us are what the Divine Plan had us slated for.

At their recent meeting the Aberdeen District Medical Society elected the following slate of officers:

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Vice President

William Taylor, M.D.,
Aberdeen

Secretary-Treasurer

David Seaman, M.D.,
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Bernard Gerber, M.D.,
Aberdeen

Alternate Delegates

Samuel Rosa, M.D.,
Redfield

Walter Miller, M.D.,
Aberdeen

George McIntosh, M.D.,
Eureka

The National Methodist Convocation on Medicine and Theology will be held in Rochester, Minnesota on April 5-7, 1967. Only advance registrations will be accepted. The registration fee is \$20.00 and is to accompany your registration request. Such requests should be addressed to: National Methodist Convocation, P. O. Box 102, Rochester, Minnesota 55901.

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At their December 15th meeting, the Yankton District Medical Society elected the following officers.

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Dagmar Glood, M.D.,
Viborg

Vice President

Alan Domina, M.D.,
Tyndall

Secretary

Larry Savage, M.D.,
Yankton

Treasurer

Morris Radack, M.D.,
Yankton

* * *

The newly elected officers of the Seventh District Medical Society are as follows:

President

J. S. Devick, M.D.,
Sioux Falls

Vice President

D. L. Ensberg, M.D.,
Sioux Falls

Secretary

B. J. Begley, M.D.,
Sioux Falls

Treasurer

R. R. Giebink, M.D.,
Sioux Falls

The December 18th recipient of the **Sioux Falls Argus-Leader's** Citizen of the Week Award was a retired Sioux Falls physician and surgeon—**L. J. Pankow, M.D.**

Doctor Pankow was recently honored by the staff of McKennan Hospital for his long service to that organization. In addition, in 1960 he was awarded the Distinguished Service Award of the South Dakota State Medical Association.

During his more than 40 years of practice in Sioux Falls, he filled every elective office in the South Dakota State Medical Association and the 7th District Medical Society.

For several years he was chairman of the state group's Grievance Committee.

Doctor and Mrs. Pankow have a daughter, Mrs. Lyndon M. King, Jr.

* * *

Dr. and Mrs. A. W. Spiry of Mobridge returned recently from a visit to Quito, Ecuador. **Doctor Spiry** had been invited by the Ecuadorian Academy of Medicine and Society of Gastro-enterology to teach and work with specialists in their field.

Alan K. Brevik, M.D., has been elected chief of staff of St. Ann Hospital in Watertown. **Carroll Clark, M.D.**, is Vice Chief of Staff and **James Larson, M.D.**, is Secretary.

* * *

The American Medical Association has notified the Executive Office of the following appointments.

Arthur A. Lampert, M.D., Rapid City — reappointed to a one year term on the Council on Legislative Activities of the AMA.

Arthur P. Reding, M.D., Marion — appointed to a one year term on the Council on Rural Health of the AMA.

A. P. Peeke, M.D., Volga — reappointed to a one year term on the Committee on Medicine and Religion of the AMA.

* * *

Robert R. Giebink, M.D., was honored on December 11th as the "Citizen of the Week" by the **Sioux Falls Argus-Leader**.

The honor was bestowed in recognition of Doctor Giebink's generosity in offering land as a site for the Minnehaha County Juvenile Detention Home.

Earlier in the year he donated a tract for the Adjustment Training Center in Sioux Falls.

The Department of Otolaryngology of the Illinois Eye and Ear Infirmary and the College of Medicine of the University of Illinois at the Medical Center, Chicago, will conduct a postgraduate course in Laryngology and Bronchoesophagology from April 10 through 22, 1967. Interested registrants should write directly to the Department of Otolaryngology, College of Medicine of the University of Illinois at the Medical Center, Postoffice Box 6998, Chicago, Illinois 60680.

* * *

The American College of Physicians announces the Kansas Regional Meeting, Kansas City, Kansas, February 24, 1967. INFO: Sloan J. Wilson, M.D., University of Kansas Medical Center, Kansas City, Kan.

* * *

The South Dakota Division of the American Cancer Society advises that they have five films available for professional medical audiences. These films can be obtained by contacting the South Dakota Division directly at P. O. Box 865, Watertown.

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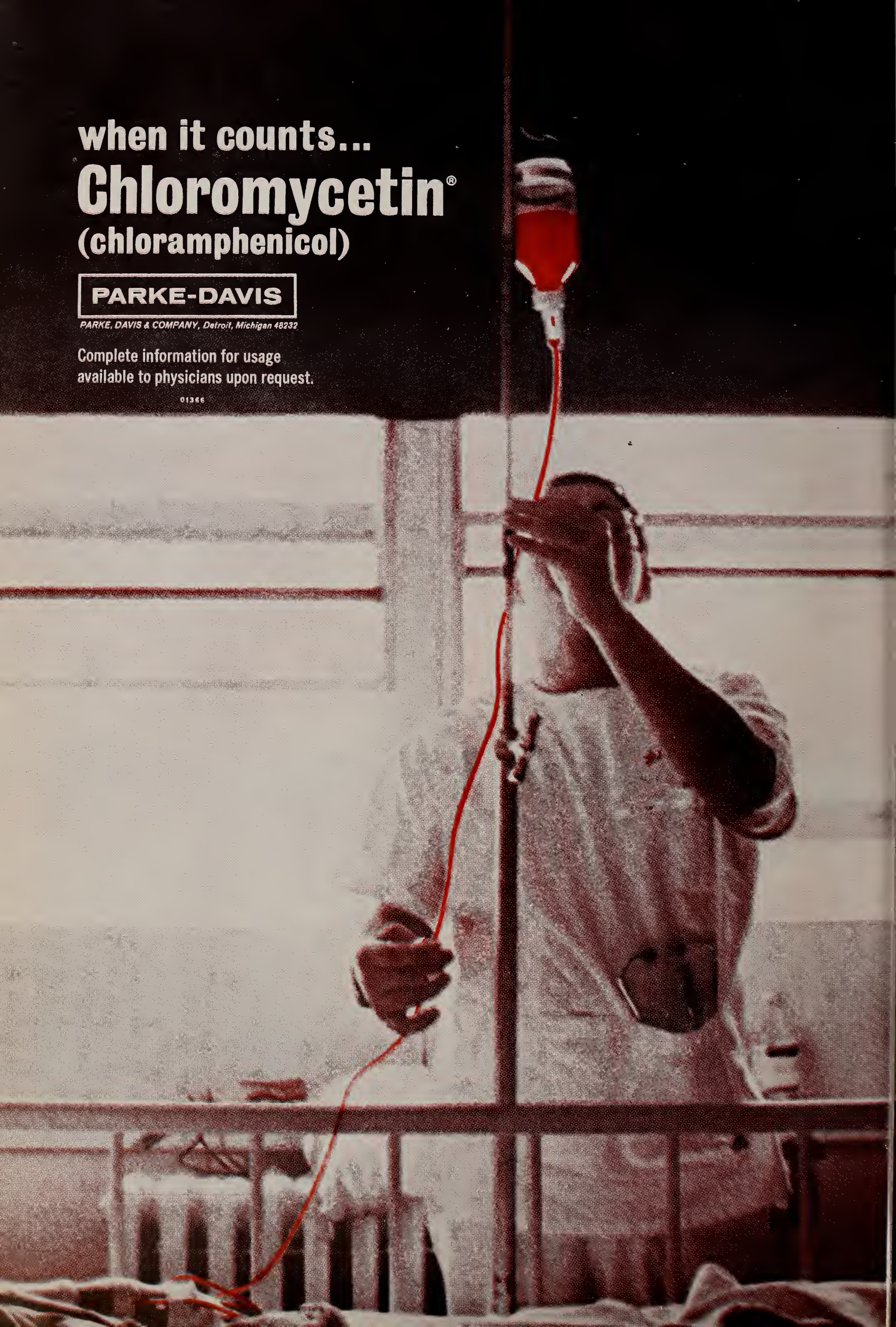
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JOURNAL OF THE SOUTH DAKOTA STATE MEDICAL ASSOCIATION
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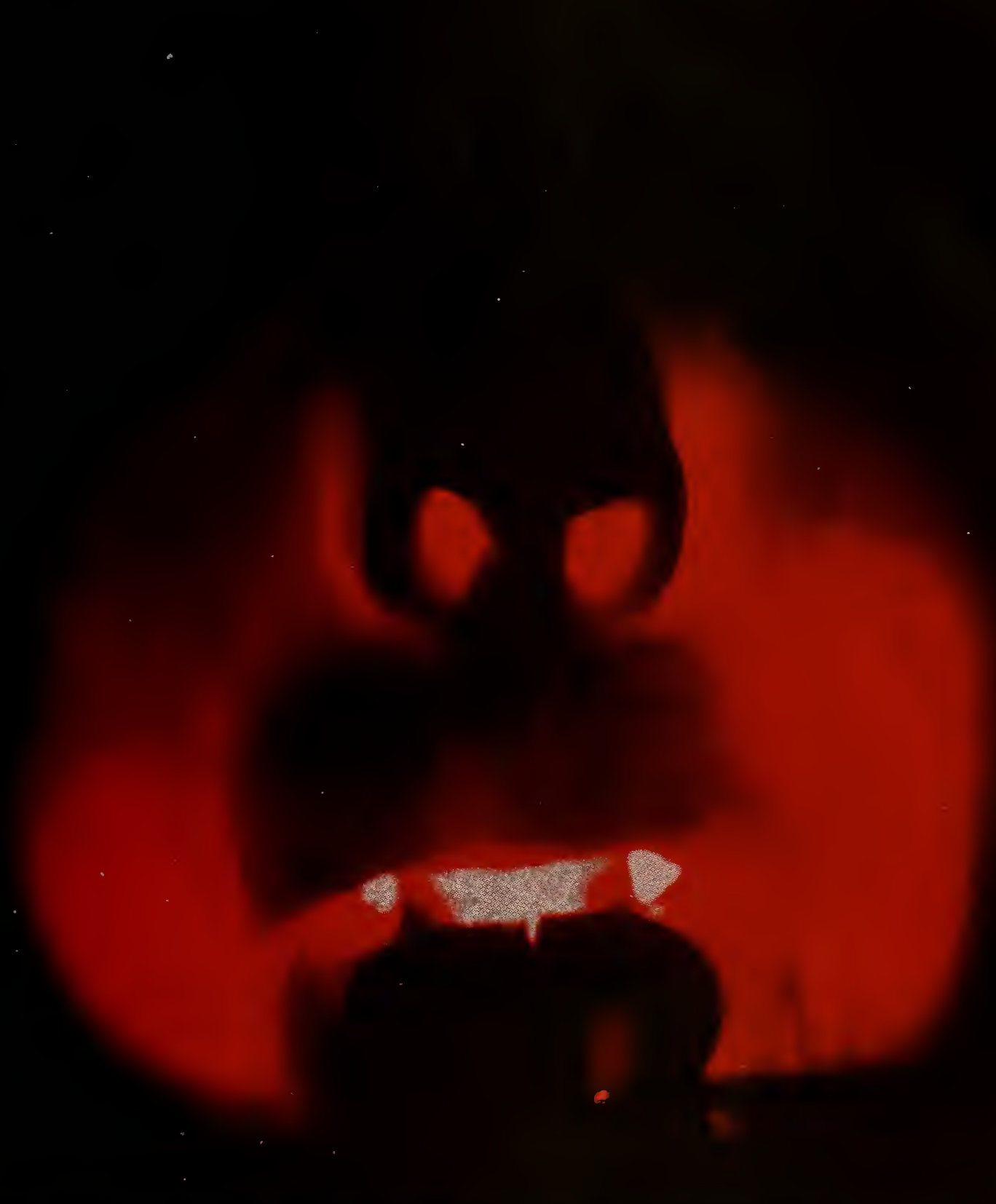
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PESTICIDE POISONING: THE INSECTICIDES

By

J. N. Spencer, Ph.D.
Director, South Dakota Poison Information Center
and Associate Professor of Pharmacology
University of South Dakota School of Medicine
Vermillion, South Dakota

Fully 20% of the information requests received by the South Dakota Poison Information Center involve cases of poisoning due to pesticides.¹ Without question, the wide employment of pesticides is an important factor contributing to our high level of agricultural productivity. On the other hand, there are more than 200 pesticides on the market, some of which are as toxic to man as they are to the pests against which they are employed. Any one of these pesticides may be sold under a number of trade names. This, combined with the diversity of their toxicology and the multiplicity of symptoms which they may induce, can confuse the physician called to diagnose a case of pesticide poisoning. Even in those cases where a history of exposure to a specific agent can be obtained, an antidote may not be available.

The pesticides most frequently responsible for the cases of poisoning coming to our attention are the insecticides. They are the cause of at least 70% of all of the cases of pesticide poisoning occurring in South Dakota.¹ The two classes commonly involved are the organophosphates and the chlorinated hydrocarbons. The present survey will be limited to a consideration of some of the more pertinent points regarding their toxicology and the methods of treatment of poisoning produced by them.

The Organophosphate Insecticides

Chemically, this group of insecticides is closely related to the nerve gases, some of the most toxic agents known to man. In 1961 they accounted for approximately 3 percent of the total U. S. production of pesticides. In the same year, they were responsible for 54 percent of the cases of pesticide poisoning occurring in the

state of California.² Those approved for use in South Dakota ³ are listed in order of their decreasing toxicity in Table I.

TABLE I.
Major Organophosphate Insecticides
Recommended for use in South Dakota

Thimet	EPN	Cygon
Phosdrin	Delnav	Baylex
Deneton	Co-Ral	Dylox
Di-Syston	Ethion	Dibrom
Parathion	Vapona	Ronnel
Guthion	Diazinon	Malathion

The pharmacology of the organophosphate insecticide has been covered in an extensive review by Holmstedt.⁴ Their great hazard is the ease with which they are absorbed through any body surface. Sprays, vapors or powders may be absorbed from the conjunctiva, skin or respiratory tract; solutions, in addition to being absorbed through the skin, may be absorbed from the gastrointestinal tract. Most rapid absorption is from the respiratory tract.

A portion of the absorbed organophosphate is hydrolyzed by the tissue phosphorylphosphatases. The rate of hydrolysis varies with the insecticide; the slower the hydrolysis, the greater the toxicity. The comparatively low toxicity of malathion may be due in part to its relatively rapid hydrolysis. The absorbed organophosphate escaping hydrolysis combines with various tissue enzymes, rendering them inactive. Most characteristic of organophosphate intoxication is the inactivation of the cholinesterases; both the pseudocholinesterases of

the plasma and the acetylcholinesterase of the tissue are affected. This inactivation is a two stage reaction, a rapid binding of the enzyme at the esteratic site followed more slowly by a binding at the anionic site. The initial bond at the esteratic site may be hydrolyzed, but with the completion of the bond at the anionic site, a stable, irreversible organophosphate-cholinesterase complex is formed. As a result there is an inhibition of the hydrolysis of acetylcholine by the cholinesterases.

Acetylcholine is involved in neuromuscular as well as synaptic transmission within the peripheral and central nervous systems. Essential to both neuromuscular and synaptic transmission is the rapid hydrolysis by acetylcholinesterase of the acetylcholine released during the transmission process. The accumulation of acetylcholine resulting from the block of esterase activity produces an effect comparable to prolonged and intense stimulation of both the peripheral and the central nervous system.

In severe acute organophosphate intoxication there may be a 90% or greater inactivation of the cholinesterases.⁵ The symptoms of intoxication are readily recognizable; pinpoint pupils, chest pain, laryngospasm, increased secretions (salivation, lacrimation, sweating, etc.), bradycardia, muscular cramps, muscle fasciculations, general muscular weakness, abdominal cramps, nausea, vomiting, diarrhea, severe headache and central nervous system depression. Death, when it occurs, is probably due to respiratory paralysis and is commonly preceded by convulsions. Fortunately poisoning of such severity is rare. More common, the symptoms are limited to abdominal cramps, nausea, and headache or possibly pinpoint pupils and tightness of the chest.

Chronic organophosphate intoxication is probably more common than realized. The stable, inactive product formed as the result of the interaction of the insecticide and the cholinesterases can only be replaced by the synthesis of new enzyme. Inactivated acetylcholinesterase is replaced at the rate of about 1% per day.⁵ Inactivated pseudocholinesterase may be replaced at a somewhat more rapid rate, but 90 days or more may be required to restore the plasma and tissue cholinesterases to within normal limits. Consequently short multiple exposures to organophosphates over an extended period could be expected to be cumulative in their effects. The slow decrease in esterase activity may lead to the development of some degree of tolerance, but ultimately a level of in-

hibition is reached at which overt symptoms are apparent. Gersham and Shaw⁶ report 16 such cases of chronic organophosphate poisoning, 13 of which involved workers in agriculture. The period of exposure varied from 1½ to 10 years. Of the 16 patients, 5 were diagnosed as schizophrenics, 7 as depressed, 3 complained of impaired memory, and 1 of chronic fatigue. Other symptoms were tremors, ataxia, muscular weakness, speech difficulties, anxiety, emotional lability and somnambulism. Total blood cholinesterase determinations were obtained on two of the patients diagnosed as schizophrenic, one exhibited 50%, the other a 60% reduction in esterase activity. On removal of these patients from exposure, even with treatment, recovery was slow. Most of the patients, however, had recovered sufficiently to return to a productive life within a year.

Cholinesterase determinations are of little value in acute organophosphate poisoning, but are of the utmost importance in the diagnoses and prevention of chronic intoxication. There is a relatively close correlation between the degree of cholinesterase inhibition, specifically the inhibition of red blood cell acetylcholinesterase, and the symptomatology. Workers subjected chronically to low levels of exposure to the organophosphates or other insecticides capable of inhibiting cholinesterase, as sevin, would be well advised to have plasma and red blood cell cholinesterase determinations at monthly intervals. As a general rule, for workers on the ground a 40% to 60% decrease in red blood cell acetylcholinesterase should be considered a danger signal, indicating the immediate transfer of the individual to work in which he would not be exposed to anticholinesterase agents.⁷ In the case of pilots of crop-dusting aircraft, the degree of depression of acetylcholinesterase that could be tolerated without impairment of flying skills would be considerably less. In view of the neurological deficit noted at low levels of cholinesterase inhibition by Bower, *et al.*,⁸ a decrease of 20% probably should be considered a danger signal necessitating the grounding of the pilot.

The key to the successful treatment of acute poisoning with anticholinesterase agents is early diagnosis and the prompt administration of atropine and pralidoxime (Protopam Hydrochloride). Initially treatment should be directed toward the establishment of a patent airway and the relief of any cyanosis present. This should be followed by large intravenous or intermuscular doses of atropine. Atropine in

large doses will antagonize the visceral (muscarinic) action of acetylcholine, but has little effect on its neuromuscular blocking (nicotinic) action. However, there is a direct relationship between survival and the rapidity and intensity of atropinization. In the recommended dose of 2 mg, atropine is well tolerated, even in the presence of mild cholinesterase inhibition. In severe poisoning this dose should be repeated every 5 to 10 minutes until the visceral symptoms are relieved or signs of atropine overdosage (dry, flushed skin and tachycardia) are apparent. A mild degree of atropinization should be maintained for at least 24 to 48 hours after exposure. In severe cases of poisoning 10 to 20 mg of atropine or more may be necessary to obtain maximal benefits. The consequences of inadequate atropine therapy are to be feared far more than the dangers of over atropinization.⁴

Pralidoxime is administered after completion of atropinization. This agent which was introduced in late 1964 after extensive clinical trials not only combines with the unreacted organophosphate but will hydrolyze the initial (esteratic) complex formed between the inhibitor and the cholinesterases. Pralidoxime is particularly effective in antagonizing the neuromuscular blocking (nicotinic) action of the organophosphates, but unlike atropine has little effect on their visceral (muscarinic) action. The effectiveness of pralidoxime in the treatment of anticholinesterase poisoning has been repeatedly demonstrated.^{5, 9, 10} The usual adult dose is 1 gm by intravenous infusion. If muscular weakness persists an additional dose of 1 gm may be administered intravenously or orally. However, since pralidoxime will only hydrolyze the insecticide-cholinesterase complex at the esteratic bond, it is of little value after the anionic bond has formed, and the drug probably should not be continued beyond 24 hours after exposure. Also, great care should be exercised to avoid pralidoxime overdosage. This drug, in itself, is a weak cholinesterase inhibitor.⁵ Treatment other than atropine and pralidoxime is symptomatic.

In addition to the actual treatment of the organophosphate poisoning, consideration must be given to termination of patient's exposure as well as prevention of the exposure of the attending personnel. Usually if the treatment is carried out in a well-ventilated area and the attending personnel wear ordinary surgical gloves, there is little hazard. However, all contaminated clothing should be removed from the

patient and laundered. The patient should be bathed with generous amounts of soap and water. Washing soda, baking soda or even bleach may be added to the bath to facilitate the hydrolysis of the insecticide. This should be followed by washing splash areas with alcohol. If the material has been splashed in the eyes, they should be irrigated with copious amounts of tap water or saline. On ingestion, gastric lavage with water or dilute sodium bicarbonate solution would be indicated. This should be followed by a saline cathartic, preferably sodium sulfate.

The Chlorinated Hydrocarbon Insecticides

The chlorinated hydrocarbons were the first to receive wide acceptance as insecticides and agricultural pesticides in this country. They constitute more than 50% of the total U. S. production of pesticides.² Accounting for about 20% of the cases of poisoning due to pesticides, the chlorinated hydrocarbons offer less hazard to man than the organophosphates. Those recommended for use in South Dakota³ are listed in decreasing order of their toxicity in Table II.

TABLE II.
Major Chlorinated Hydrocarbon Insecticides
Recommended for use in South Dakota

Endrin	Lindane	Chlorobenzilate
Thiodan	Toxaphene	Dimite
Dieldrin	Heptachlor	Kelthane
Aldrin	DDT	Methoxychlor

The chlorinated hydrocarbon insecticides, as the name implies, have a common chemical composition. Beyond this broad similarity, however, they vary widely in their chemical structure, their insecticidal activity, and their toxicity. All are absorbed from the respiratory tract or following ingestion. Some, however, like aldrin, dieldrin and endrin may be absorbed with sufficient rapidity from the skin or mucous membranes to cause acute intoxication.¹¹ Cutaneous absorption of others, as lindane or DDT, is less efficient.

On absorption, aldrin and heptachlor are rapidly converted to their more toxic epoxides, dieldrin and endrin.¹¹ The initial metabolites of the other chlorinated hydrocarbons, however, are probably less toxic than their parent compounds. All chlorinated hydrocarbons, including dieldrin and endrin, are slowly metabolized or eliminated. In man dieldrin is eliminated in

the urine in the form of at least five metabolites; DDT, primarily as DDA [2,2 bis (para-chlorophenyl) acetic acid].¹² Of the other agents, traces may be excreted unchanged in the urine, but for the most part their metabolic fate is unknown.

The pharmacology of the chlorinated hydrocarbons has been subjected to extensive investigation, but the mechanism of action has not been determined for a single member of the group. The primary site of action appears to be the cerebellum.¹³ Typical signs of poisoning may be induced in animals following decerebration. On the other hand, removal of the cerebellum or spinal section will reduce the intensity of the symptoms, but only section of the motor nerves will completely abolish the muscular actions.

The symptoms of poisoning regardless of the chlorinated hydrocarbon involved are similar. Mild cases are characterized by headache, dizziness, gastrointestinal disturbances, numbness and weakness of the extremities, apprehension, and hypersensitivity to external stimuli. In more severe cases, fine muscular tremors appear, spreading from the head to the extremities. Eventually, there are jerking movements involving whole muscle groups and finally convulsions.¹³ Death due to cardiac or respiratory arrest occurs during convulsions.

In addition to the above there may be polyneuropathy, jaundice and circulatory disturbances. The latter result from disturbances in autonomic function. DDT, for example, appears to block vagal transmission and probably choline acetylation,¹⁴ while the late stages of both dieldrin and endrin poisoning are characterized by a marked bradycardia as the result of stimulation of the vagal centers.¹⁵ On the other hand, aldrin and heptachlor, their epoxides, dieldrin and endrin as well as DDT, release catecholamines.^{16, 17} It is not known whether this release is due to a direct peripheral action or is secondary to a stimulation of the adrenergic centers. The release of catecholamines, however, may be accompanied by a marked elevation in peripheral resistance.¹⁶ Also, there may be tachycardia and ventricular arrhythmias.¹³

Polyneuropathy is rare, but two cases have been reported, one following exposure to a mixture of DDD and aldrin and the other following exposure to a mixture of DDT and endrin.¹⁸ Recovery was slow, but apparently complete.

Chronic intoxication from exposure to the chlorinated hydrocarbons is far more common

than with the organophosphate insecticides. The relative stability of these agents favors persistent residues on food products and slow elimination, their accumulation in body tissues, especially fat.¹² There is no place in the world where chlorinated hydrocarbon residues have not been found in the food chain or in the tissues of man. The average daily dietary intake of DDT is about 180 mcg. The average level of storage of DDT (DDT and metabolites) in man in this country is about 12 ppm, of lindane 0.2 ppm and of dieldrin 0.15 ppm.²⁰ However, there has been little or no change in the level of tissue chlorinated hydrocarbon storage in the U. S. over the past 10 to 15 years.²⁰ The level of dietary intake of DDT probably could be increased by 200 fold without detectable evidence of injury, but manifestations of chronic intoxication could be anticipated if the daily intake was increased much above this level. The intensity of the symptoms of chronic intoxication is in direct relation to the concentration of insecticide in tissue and is comparable to those of acute poisoning.

There are no specific antidotes for the treatment of poisoning produced by the chlorinated hydrocarbon insecticides. Of necessity, treatment is symptomatic and supportive.²¹ If the symptoms are mild, small, divided oral doses of pentobarbital sodium may be adequate to control the hyperirritability. If the poisoning is severe, that is if there are muscular tremors and/or convulsions, thiopental sodium should be immediately administered intravenously in a dose adequate to control the symptoms. This should be followed as necessary by intravenous or oral doses of pentobarbital sodium sufficient to maintain control. Calcium gluconate may be of value as a supplement in severe poisoning, but it should not be employed as a substitute for barbiturate therapy. Other treatment would be purely supportive. The use of sympathomimetic agents, atropine, morphine, or morphine derivatives, is contraindicated. Recovery is usually rapid and complete, but in cases of polyneuropathy may require a month or more. If muscular tremors and/or convulsions persist for longer than a week, some other causative factor should be sought.²¹

As with the organophosphate insecticides, as soon as the symptoms of chlorinated hydrocarbon intoxication have been controlled, measures should be instituted to terminate exposure. The methods employed are the same as those for termination of exposure to the organophosphate insecticides.

Conclusion

The insecticides, in particular the organo-phosphates and the chlorinated hydrocarbons, are highly toxic agents and frequently are the cause of poisoning in both man and animals. The present paper was not intended as a comprehensive review of intoxication by these agents, or the methods of treatment, but rather to emphasize that with prompt and adequate therapy, an uneventful recovery can be anticipated. Even in severe cases when neurological or liver and kidney damage are obvious, patients have completely recovered. It is most significant that when recovery has been attained, no sequelae have been noted and the patients have not demonstrated further complications.

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ANTIMICROBIAL THERAPY IN PEDIATRICS

By

James N. Etteldorf, M.D. and Stanley E. Crawford, M.D.*

Editor's Note: The opinions expressed in this paper are those of the author and do not reflect those of the editorial staff of this Journal.

Intelligent use of antimicrobial agents is largely responsible for the improved mortality and morbidity and reduced sequelae from bacterial infections. Despite many advantages attendant with their use, certain comments are in order before entering into a discussion or review of the use of antibiotics in pediatric practice.

Much information, perhaps too much, directed mainly toward encouraging the use of an ever increasing number of antibiotics, has appeared in form of lectures, treatises, scientific articles, advertisements, etc. during the past decade or two. All too often we depend entirely upon "Professional Service Men" and advertisements for sources of scientific information. Because of the inherent bias associated with such information, needless use of these agents follows. If this presentation will result in more selective and discriminant use of antimicrobials, it will have accomplished a major portion of our objective.

Let us ask ourselves a few questions in order to analyze our practices. How often have these agents been prescribed by telephone without examining the patient? Have we advised the patient and the pharmacists that these agents are not to be refilled in order to prevent repetitious use to the patient or another person? How many prescriptions are written for these agents merely because the patient expects it or because it is felt that the antibiotic is harmless — only to determine later that resistant strains of bacteria have developed, that teeth are permanently discolored, etc.? How many patients with nonbacterial upper respiratory infections are receiving antibiotics? In how many instances

of viral infections has penicillin been changed to such potentially dangerous agents as chloramphenicol? How many still consider chloramphenicol the agent of choice in infections and are not cognizant of the fact or are unwilling to accept that this agent is capable of causing severe life threatening reactions which limit its use to a few specific indications? How many children with measles, chickenpox, etc. receive penicillin or broad-spectrum antibiotics to prevent "secondary infections"? How many patients receive antibiotics routinely following clean surgical procedures?

We all should remember:

- 1) That these agents are not harmless.
- 2) Usually newness doesn't imply superiority.
- 3) Thorough understanding and use of few antibiotics are preferable to superficial knowledge and use of many.

Antibiotics may conveniently be divided according to mode of action into the following categories:

1. Bactericidal — with action directed toward cell wall.
2. Bacteriostatic — (a) those with action directed toward synthesis of RNA and other proteins, i.e., enzymes etc. (b) those which interfere with intermediary metabolism of the cell.

Bactericidal agents which act primarily by disturbing the synthesis, permeability, or function of the bacterial cell wall or membrane include the penicillins, the cephalosporins, bacitracin, vancomycin, ristocetin, novobiocin, the amino-glucosides such as streptomycin, kanamycin, neomycin, and the polymyxins. Amphotericin B and nystatin, two commonly used fungicidal agents, also have their site of action in the cell membrane. Control of infections due to gram-positive organisms is more satisfactory than those caused by gram-negative bacteria.

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This phenomenon may be related to composition of the cell wall. The wall of the gram-positive organism is composed of amino acids and amino sugars whereas cell wall of the gram-negative organisms is more complex consisting of amino acids, amino sugars and also lipids.¹

Bacteriostatic and cytotoxic agents exert their effect by interfering with the biosynthesis of proteins. Included in this group are the tetracyclines, chloramphenicol, erythromycin, and oleandomycin. Another group of agents, which are bacteriostatic and affect the intermediary metabolism of the cell, include the sulfonamides which are structurally and biologically similar to para-aminobenzoic acid and inhibit the formation of folic acid.² In addition, anti-tuberculous agents such as para-aminosalicylic acid and isoniazid are included in this group.

The usefulness of the available antibacterial agents depends upon many considerations including dosage and route of administration. One drug correctly used is generally to be preferred over a battery of agents. Selectivity of the agents with genuine indications based on cultures and sensitivity tests, when indicated, and used in adequate dosage for sufficient time with due respect to toxic effect is essential for success in managing infections.

Recommendations for specific infections:

Group A streptococci:

The beta hemolytic streptococcus Group A through two decades has remained sensitive to penicillin and in the absence of allergic or other sensitivity reactions is the drug of choice in combating these infections. Ten days of therapy are recommended.³ Cultures of the throat and nasopharynx are necessary to establish a diagnosis. In our experience, only 12% of sore throats are attributed to beta streptococci. Sensitivity tests against this organism represent needless expense and only misinformation can be obtained. Penicillin-G potassium or procaine penicillin-G, phenoxymethyl penicillin (Penicillin V) or benzathine penicillin-G (Bicillin) are the forms of choice. Bicillin intramuscularly is adequate in streptococcal infections.⁴ However, early treatment with rapid acting penicillin is indicated in serious and overwhelming streptococcosis.

Recently, it has been suggested that treatment failures of oral penicillin may be related to the presence of a penicillinase producing staphylococcus which colonizes the nasopharynx

along with the streptococcus.^{5, 6} However, there is no evidence for resistance to therapy with intramuscular penicillin including Bicillin.

If the child is penicillin sensitive, either erythromycin or triacetyloleandomycin (TAO) may be used. The estolate form of erythromycin (Ilosone) occasionally produces cholestatic jaundice in adults; but not in children.⁷ Triacetyloleandomycin is more toxic than erythromycin causing not only cholestasis but also rashes, neutropenia, and rarely platelet suppression; drug fever occurs occasionally. It is unfortunate that TAO is marketed in combination with tetracycline for this combination is irrational and not backed by evidence of synergism. Another combination is tetracycline plus novobiocin.

The beta hemolytic streptococcus is not eradicated with sulfonamides and they should not be used in treatment of active infection. However, their use in prophylaxis of acute rheumatic fever remains satisfactory in the general population. In military populations, sulfonamides used prophylactically have resulted in emergence of resistant strains of streptococci.⁸ The usual disk sensitivity test is neither required nor reliable.

There are several well documented studies showing that 32% of isolated group A beta hemolytic streptococci are resistant to tetracycline. This includes the nephritogenic type 12.⁹ Consequently, their usefulness in these infections is limited.

Cephalothin, a relatively new drug, has been recommended for use if the patient is penicillin sensitive.¹⁰ However, this is impractical for office use because it must be given either intramuscularly or intravenously every 4 to 6 hours in present dosage forms.

Chloramphenicol **may properly be regarded as a potentially dangerous drug.** It has limited usefulness in general, and has no place in the treatment of streptococcal infections. Chloramphenicol blocks protein synthesis. It blocks the ribosomal binding sites for messenger RNA and thus suppresses antibody formation.¹¹ This agent also produces RBC maturation arrest, and at times, aplastic anemia may result unrelated to dosage or duration of therapy. Phenylalanine, an amino acid, has partially reversed some of the cellular toxic vacuolizations but its true effect in altering toxicity remains to be proven.¹²

Pneumococcal Infections:

Although pneumococci have been demonstrated to be resistant to penicillin in vitro, it remains the drug of choice in the treatment of these infections with erythromycin being useful in patients who are sensitive to penicillin.^{13, 14} Therapy in pneumococcal pneumonia is continued for 7-10 days and for at least two full weeks in a pneumococcal meningitis in high dosage.

Approximately 2% of pneumococci are now resistant to tetracycline therapy.¹⁵ These resistant organisms are found (a) in patients who are receiving tetracycline at the time pneumonia develops or (b) among hospitalized patients. Sulfonamide resistant pneumococci are well known.

The physician must be aware that many nasopharyngeal cultures yield pneumococci during Winter and Spring which may be unrelated to disease of the lower respiratory tract. Pneumococcus is rarely responsible for sore throat.

Hemophilus influenzae infections:

Hemophilus influenzae infections may be treated with a number of agents. Tetracycline may be used for less severe infections and has been recommended by some in meningitis. However, most authorities recommend chloramphenicol for Hemophilus influenzae meningitis. The place of ampicillin in the therapy of meningitis is under evaluation. Reports of cases treated with ampicillin alone seem as satisfactory as the triple drug approach for meningitis.¹⁶ The dose for ampicillin in the therapy of meningitis is 150 mg./Kg./day given every 6 hours parenterally.

Antimicrobials in otitis media:

The treatment of suppurative otitis media must take into consideration causative bacteria. Bacterial pathogens known to produce this entity include streptococcus, pneumococcus, Hemophilus influenzae, and in a few instances, staphylococcus. The combination of penicillin and sulfa therapy for 7-10 days is widely recommended. Tetracycline may be useful, but one must appreciate the undesirable effects, i.e., dental staining, development of resistant strains, monilia enteritis and proctitis and elimination of normal flora. Ampicillin in the dosage of 50-75 mg./Kg./day is a useful alternative.

Meningococci:

Because of the development of sulfonamide resistance by certain strains of meningococci, penicillin in generous amounts has become the

agent of choice in treating this infection. Cephalothin (50-100 mg./Kg./day) or erythromycin may be tried if the patient is penicillin sensitive in the presence of sulfonamide resistant strains. Ampicillin is proving a useful agent. At present, we recommend using both sulfadiazine or sulfisoxazole (Gantrisin) and penicillin while awaiting results of sensitivity studies on Mueller-Hinton agar.

Until recently, sulfadiazine has been the standard by which effectiveness of other drugs was measured. Two grams daily for 2-3 days would reduce a population carrier rate from 80% to less than 1%. It was considered as the therapeutic agent of choice until 1963 when 7 out of 8 strains tested in a confined population revealed marked sulfonamide resistance. Sulfadiazine only reduced the carrier rate from 57% to 49% at the U. S. Naval Training Center in San Diego.¹⁷ Resistant organisms were later noted at Fort Ord,¹⁸ then throughout California.¹⁹ We have had three such cases in our hospital. Whereas the usual meningococcus causing meningitis has been group A in the past, currently the resistant strains often belong to group B or C.

No satisfactory substitute for sulfadiazine as a prophylactic agent is yet available for the resistant strains. Oral penicillin-G in doses of 1 million units/day for 4 days was not effective in eradicating the carrier state.¹⁷ These sulfa resistant strains are sensitive to ampicillin and chloramphenicol; however, toxicity of the latter excludes its use. In view of these observations, prophylaxis for adults includes 2 grams of sulfa daily for two days and, in addition, four days of penicillin therapy.

Staphylococcal infections:

The problem of the resistant staphylococcus is familiar to clinicians. Wide usage of antibiotics has eliminated sensitive strains only to allow resistant ones to develop. Although certain types have been classically associated with nursery epidemics and infections in the mother, there is no evidence that the penicillin resistant strains are more virulent than the penicillin sensitive strains. Host resistance becomes important in dealing with the treatment of the staphylococcal infection. Patients with congestive failure and diabetes are prone to develop staphylococcal infections. In pediatric practice, premature infants, children with cystic fibrosis of the pancreas and leukemia patients are often infected by the staphylococci.

The outcome of treatment depends upon factors other than a consideration of the antibiotic

agent alone. A foreign body may need removal; collections of pus must be adequately drained. Certain staphylococcal infections such as paravertebral abscess, an epidural abscess and other abscesses or an acute spondylitis, are diagnosed late and early therapy is often inadequate.

The choice of an antibiotic must depend upon culture and sensitivity guidance, and bactericidal drugs are preferred. While awaiting the results of cultures, most authorities would recommend the use of the newer penicillinase resistant penicillins.

Resistance to penicillin is mainly attributable to penicillinase, an enzyme originally found in some strains of *E. coli* but widely distributed among both gram-positive and gram-negative bacteria, which destroys the action of penicillin producing a product which is inactive.

Approximately two-thirds of all staphylococci from hospitalized patients are now resistant to penicillin-G. However, a majority of "street" strains remain sensitive to penicillin and it should be used in these cases. One-third are resistant to tetracycline, erythromycin, chloramphenicol and novobiocin. All strains, however, remain sensitive to bacitracin and vancomycin. Surveillance by a number of hospitals in England has detected methicillin (Staphcillin) resistant staphylococci. Four percent of staphylococci isolated from hospital sources are now resistant to this and similar agents.²⁰

The new penicillins which are resistant to penicillinase all have the same basic structure as penicillin-G. Chemically, they are composed of five ring structure (thiazolidine) and, in addition, the B-lactam ring.²¹ The antistaphylococcal penicillins available include methicillin (Staphcillin) which may only be given intravenously or intramuscularly, oxacillin (Prostaphlin), nafcillin (Unipen) and cloxacillin (Tego Pen). The latter three agents may be given orally or parenterally. **The anti-staph penicillins are less potent than penicillin-G against penicillin-G-sensitive organisms, and all are somewhat more toxic than the parent molecule.** Tissue levels are low unless large doses are used; therefore, in severe illness, dosages from 100-300 mg./Kg./day are recommended. Kidney toxicity has been noted in excess of 300 mg./Kg./day; agranulocytosis has been reported with methicillin but was reversible. All of the antistaph penicillins are given in 4-6 doses daily and all should be given parenterally if the infection is severe. These agents currently are the drugs of choice in staphylococcal infections resistant to penicillin-G, but cannot be used if the patient

is penicillin sensitive. There is no reason for selecting one anti-staphylococcal penicillin in preference to another.²²

Although too nephrotoxic in older children and adults, bacitracin is an excellent drug for severe staphylococcal disease in infants less than one year of age. It is virtually nontoxic in dosage of 800-1000 units/Kg./day. It is given intramuscularly every 12 hours with a freshly prepared solution for each 24 hour period. It may be given from 1 to 2 weeks after which therapy should be switched to another agent such as oxacillin or one of the other penicillinase resistant penicillins, if additional therapy is indicated.²³

Cephalothin, only available for parenteral injections, is highly efficient in eradicating infection and deserves serious consideration in these infections despite its current cost.

Vancomycin in doses of 40 to 60 mg./Kg./day must be given intravenously as a continuous infusion or four divided doses. This agent possesses eighth nerve toxicity. It may cause thromboses at injection sites, eosinophilia; drug fever and occasional renal damage have also been observed. Also, allergic reactions of an anaphylactoid nature and peripheral neuropathy are hazards in its use. It can only be recommended at the present time in penicillin sensitive subjects, and those with no overtones of renal problems. The adult dose will average 2 gms./day.²²

Salmonella and Shigella infections:

Chloramphenicol is still regarded as the drug of choice for salmonella including typhoid fever; however, ampicillin has been successfully used in severe infections and now holds promise of possibly eradicating typhoid carriers. Tetracycline continues to be of value when treating infections due to most strains of shigella. Ampicillin is also effective.²⁴

Gonococcal infections:

Resistance of gonococci to sulfonamide rapidly developed during World War II when gonorrheal urethritis was again controlled by penicillin therapy. Larger doses of penicillin are now necessary as this organism has become less susceptible. Also; rapid streptomycin resistance has emerged during this period. The drug of choice at this time in the adolescent with urethritis is a minimal dosage of 2.4 million units of procaine penicillin. Patients not responding are treated with either tetracycline or erythromycin over a four day period.

Usefulness of new broad-spectrum-antibiotics:

Ampicillin has no place in the therapy for penicillinase producing staphylococci; however, it has great clinical usefulness in a variety of infections, some of which have been discussed previously, because it possesses broad-spectrum activity. It is now available in preparations for parenteral as well as oral use. Toxicity to orally administered ampicillin includes nausea, vomiting and diarrhea. Patients may also exhibit eosinophilia. It is essentially nontoxic to the kidney. Dosage recommendations vary from 50-150 mg./Kg./day at four to six hour intervals. It appears to be an agent of choice in shigella and pertussis infections,^{25, 26} and is useful in certain Salmonella infections including typhoid fever. Ampicillin is recommended for eradication of the typhoid carrier state.²⁷ Approximately 60% of *E. coli* infections are susceptible to this agent; however, the pseudomonas, klebsiella, aerobacter aerogenes, the indole-positive proteus, are resistant to ampicillin.

Cephalothin (Keflin) a non penicillin derivative is not affected by penicillinase and is effective against resistant staphylococcus. Although anaphylactoid reactions have been reported with its use, those who are allergic to penicillin usually tolerate this drug. It is not absorbed from the gastrointestinal tract and has caused rashes, transaminase elevation, and rare neutropenia. Its effects are somewhat unpredictable but it appears to control a fairly wide spectrum of infectious organisms such as Group A hemolytic streptococci; streptococcus viridans, enterococci, pneumococci, non-penicillinase as well as penicillinase producing staphylococci. Meningococcal, gonococcal, and diphtheria infections are reportedly sensitive to this agent. To a lesser extent, the Salmonella group of organisms including typhoid, proteus mirabilis, and certain strains of *E. coli* are also sensitive. About half of the strains of Shigella tested are sensitive to cephalothin; many strains of *H. influenzae* have been resistant.²⁸

Some authorities are recommending cephalothin as the drug of choice in suspected bacterial sepsis in adults until results of cultures are obtained.¹⁰ It has no nephrotoxicity. It is primarily limited to hospital use and often a more effective drug is available. The dosage in adults has ranged between 2 and 8 grams daily; the child 40 and 80 mg./Kg./day intramuscularly or intravenously every 6 hours is recommended.

Urinary Tract infections:

Again cultures and sensitivity studies should form the guidelines in the management of infections of the urinary tract with great respect for underlying urinary tract anomalies.

A sulfonamide in the form of sulfisoxazole or triple sulfonamides given for a period of two to three weeks represents a wise choice for initial acute urinary tract infections. The newer long acting sulfonamide agents have increased the incidence of the Stevens-Johnson syndrome²⁹ and are mentioned only to be condemned. For severe urinary tract infections (pyelonephritis), especially those due to *E. coli*, kanamycin in dosage of 15 mg./Kg./day given on a 12 hour basis for 10-12 days is often useful despite its nephrotoxicity. Ampicillin and cephalothin are used if the organism is known to be susceptible and if the BUN is elevated indicating reduced renal function. Tetracyclines may be used in urinary tract infection due to sensitive organisms but may increase a pre-existing elevation in BUN. We wish to emphasize that **tubular damage resulting in a Fanconi-like syndrome may follow administration of an outdated tetracycline.**³⁰

Infections of the urinary tract due to streptococcus faecalis may respond to erythromycin; proteus mirabilis is usually sensitive to ampicillin, nalidixic acid (NegGram) and cephalothin. Infections with indole-positive strains of proteus such as vulgaris and morgagni often respond to kanamycin and on occasion to novobiocin; chloramphenicol may be used when other agents fail.

The pseudomonas infections, regardless of site, remain to be a difficult problem. The polymyxins, either polymyxin B or polymyxin-E (colistimethate) are recommended in dosage of 2.5 mg. and 5 mg./Kg./day respectively. A new drug, gentamicin, may be helpful but neither efficacy nor safety are established.³¹

Nalidixic acid, an agent which is not related to any other antimicrobial, results in relatively low tissue levels and rapid bacterial resistance has developed while on therapy. In high dosage, it may precipitate convulsions in a child with this diathesis; it causes gastritis with nausea and vomiting and skin rashes. Nalidixic acid is not effective against the pseudomonas. Dosage is 50 mg./Kg./day by mouth in four divided doses.

Furadantin, which produces undesirable side effects, is another agent of limited value in urinary tract infections and requires an acid urine. Its use results in low tissue levels and its

efficacy is dependent upon a high urine level. Peripheral neuropathy may result when retention occurs. Nitrofurantoin will precipitate hemolysis of primaquine-sensitive erythrocytes. It should not be used in infants less than three months of age.²⁸

The therapy of recurrent or chronic urinary infections in the absence of stasis, obstruction or foreign body may require long term drug prophylaxis. Useful are, nitrofurantoin in reduced dosage (3 mg./Kg./day), one of the sulfonamides, or mandelamine (2 gm./M² day), with an acidifying agent such as ascorbic acid in similar dosage to keep urinary pH less than 5.5. One should be cautious in interpreting disk sensitivities to mandelamine since most organisms are inhibited and this may bear no correlation with predictable clinical outcome.

Antibiotics used in treatment of premature and newborn infants:

Antibiotic usage in the premature and newly born infant requires dosage adjustment with many drugs, particularly chloramphenicol and the sulfonamides. Renal functions are significantly underdeveloped at this age.³² Of particular value in this age group is kanamycin, which is excreted almost entirely in the urine. It has a prolonged plasma half life, and, therefore, dosage may be given at 12 hour intervals with a reduction in the 24 hour dosage to avoid toxicity. Bacitracin is less toxic to the neonate than the older child or adult. Chloramphenicol is rarely indicated and may cause cardiovascular collapse (gray syndrome) which is not seen in the older individual. The dose of chloramphenicol 25 mg./Kg./day is recommended in newborns and prematures less than one week, provided its possible advantages outweigh its potential undesirable side effects. Blood levels of 10 to 20 micrograms are generally safe and may guide its use; however, levels usually are not obtainable. Repeated reticulocyte counts which are low may indicate hematological suppression. Maturation arrest of bone marrow elements reliably indicates hematological suppression at a time when this adverse effect may be reversible and should be examined approximately every fifth day for meaningful information.

Polymyxin B may be given IM in dosage of 3.5 mg./Kg./day for one week. Its sister compound, colstimethate, is given in doses of 6-7 mg./Kg./day in three or four divided doses. In pseudomonas meningitis, polymyxin 1 mg. daily may be given intrathecally for several days.

Coly-mycin as now available contains dibucaine, a local anesthetic, and cannot be used intrathecally or intravenously.

The tetracyclines when used in small infants may occasionally cause pseudo tumor cerebri; it will consistently be deposited in dental enamel and cause staining. In addition, growth is retarded in premature infants and dental caries are increased. Tetracyclines also cause retardation of bone growth. Use of these agents alters normal flora. Agents more desirable than tetracyclines are usually available for the neonate.

When faced with an infection of unknown etiology in an infant of this age group, and also in older children, we utilize penicillin and kanamycin. In neonatal meningitis, ampicillin plus kanamycin is generally used as initial therapy prior to cultural isolation.

Therapy with combinations of antibiotics:

As stated previously, selective use of a single antibiotic is preferable to mixtures. **Unfortunately**, serious infections too often are treated without initial cultures and sensitivity studies.

Changes in the sensitivity patterns of organisms which occur from year to year place a greater reliance upon the laboratory; however, in vitro studies may not agree with the patient's course to an agent selected.

In 1950, Hunter reported synergism in the eradication of enterococcal endocarditis with a combination of penicillin and streptomycin.³³ In 1951, a report appeared showing a higher mortality rate in pneumococcal meningitis when treated with penicillin and tetracycline than when penicillin alone was used. This may represent an example of drug antagonism.³⁴ In 1956, certain promoters of antibiotics proclaimed a "third era in antibiotic therapy"³⁵ by marketing of tetracycline and oleandomycin. This was followed by financial success to the promoters without satisfactory evidence of merit.³⁶

Dowling believes that combinations of bactericidal agents may result in synergism rather than antagonism. On the contrary, if a bactericidal agent and a bacteriostatic one are paired in therapy, one may find synergism or antagonism, or neither. If bacteriostatic agents are used together, neither synergism nor antagonism occur. In actual practice, only the following combinations may be recommended.

(1) Enterococcal endocarditis is best treated with penicillin and streptomycin. (2) Although

brucellosis was formerly treated with tetracycline and streptomycin, recent reports demonstrate tetracycline alone is satisfactory.³⁷ (3) It is well accepted in tuberculosis to treat with drug combinations of isonizid, para-aminosalicylic acid and for limited periods, streptomycin.

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CLINICOPATHOLOGICAL CONFERENCE - SIOUX VALLEY HOSPITAL

From the Intern and Resident Teaching Conferences of the Sioux Valley Hospital, Sioux Falls

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This 3-year old white female was well until 3 months prior to admission. At that time she developed elevation of temperature up to 103° , joint complaints with mild swelling, listlessness, and irritability. Her knees hurt when she walked and her hips, knees, and elbows were limited on motion because of pain. She also developed periorbital edema and malar rash. There was an evanescent rash on the chest and abdomen. Hemogram showed a hemoglobin of 11.1 gm. % but was otherwise normal. Urinalysis, BUN, uric acid, ECG, ASO titer, latex fixation test, and throat culture were unremarkable. The erythrocyte sedimentation was 23 mm/hr. and 19 mm/hr. Because of back complaints an x-ray film of the lumbar spine was taken. This was negative as were films of the pelvis, knees, and chest. Sinus films revealed maxillary sinusitis. She was given prophylactic penicillin and aspirin. Over the several weeks prior to her last admission she developed increasing muscle weakness and was unable to walk. The periorbital edema became more marked.

On admission temperature was 100.8° , respiration 24/minute and blood pressure 119/78. She was a well-developed, well-nourished, irritable, little girl with marked periorbital edema and reddish discoloration about the eyes. There were several palpable anterior cervical and posterior cervical nodes. The lungs were clear. There was a Grade II late systolic murmur over the left fourth intercostal space. The abdomen revealed no enlarged organs. The extremities all showed non-pitting edema, slight warmth, and tenderness but no redness. There was generalized weakness and she complained of pain on extension of the extremities. Sensory examination and reflexes were normal.

Laboratory examination revealed hemoglobin 10.5 gm. %, RBC 4.01 million/mm³, hematocrit

33 vol. %, MCH 26 micromicrograms (normal 29 ± 2), MCV 83 cubic micra (normal 94 ± 10), MCHC 32 (normal 34 ± 2), WBC 7100 with 50% polys, 3% bands, 43% lymphocytes and 4% monocytes. Platelets were adequate on smear and red cells were normochromic and normocytic. Urine was straw colored, cloudy, specific gravity 1.013, pH 7.0 and negative for protein, sugar, and hemoglobin. There were 1-3 WBC/HPF. Sodium was 142 meq/L, potassium 4.4 meq/L. Throat culture revealed normal flora. Electrophoresis showed albumin 2.8 grams (normal 3.5-5.95), alpha I. 0.25 gm% (normal 0.124-0.350), alpha II 0.69 gm% (normal 0.434-0.935), beta 0.61 gms% (normal 0.496-1.119), and gamma 0.8 gms% (normal 0.558-1.19). Creatine phosphokinase (CPK) was 1200 units (normal 0-200 units). Lactic Dehydrogenase (LDH) was 1220 units (normal 0-500 units) but fractionation into its isoenzyme components revealed a non-specific pattern.

The patient's course in the hospital was characterized by increasing muscle weakness necessitating tracheostomy and gavage feedings. She developed a bilateral lower lobe pulmonary infiltrate. Her hemoglobin fell as low as 6.7 gms% and she was transfused with two units of blood. The bleeding was attributed to irritation by the nasogastric tube. She was treated with steroids through her hospital course which lasted thirty-eight days before she was found dead.

CLINICAL DISCUSSION

Dr. Hosen: This little 3-year old girl was well until three months prior to admission when she complained of mild joint swelling and was listless and irritable. All of these symptoms you could find in any sick three year old. There are a number of non-specific joint complaints associated with viral and bacterial infections in youngsters. Her knees hurt when she walked. She had stiff knees and elbows which were limited on motion. It is a little unusual to have non-specific joint pains that generalized. Then she developed periorbital edema and a rash.

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At this point I'm sure any alert physician would think of trichinosis. A hemoglobin of 11.1 gms% we can accept in a three year old child as normal. Physicians dealing with adults sometimes look on that as anemia; I don't consider it such in a child.⁴

Other chemistries and urinalysis were normal. The latex fixation test was negative. This test is not very helpful in children since it is positive in only about 12% of children with proven rheumatoid arthritis.⁵ This points out one of the differences between adult and pediatric rheumatoid arthritis. The sed rate was what could be considered normal in children. We often see children who are vaguely ill perhaps with a poststreptococcal syndrome or a not so recent bacterial infection with a sed rate at 23 mm/hr. We are used to seeing levels of 60 or over in children who have definite collagen disease.

This child's muscle and joint complaints extended into the lumbar area. All of her x-rays were negative. One unusual x-ray finding was a maxillary sinusitis which is rather rare in three year old children whose maxillary sinuses are not very large. She was given penicillin and aspirin for maxillary sinusitis, and prophylactically because there was a possibility of rheumatic fever. She was discharged but increase in muscle weakness made it difficult for her to walk. Periorbital edema became more marked. Again this could be trichinosis although I think it would be an unusually severe case. There are many undiagnosed cases of trichinosis. It is recognized, of course, only in patients with symptoms but *Trichina* may be found in one of every twenty or so people in large scale studies.⁶

On final admission her vital signs appeared normal. The blood pressure of 119/78 is not significant for an excited child using a medium-sized cuff which is used for a three year old. She was irritable and had marked periorbital edema with abundant reddish discoloration. This leads us somewhat away from trichinosis and makes us consider dermatomyositis. There were no unusual lymph nodes. There was a heart murmur (not necessarily significant). We are not told if it changed with position or exercise. It sounds like a functional murmur. There is no known association between dermatomyositis and cardiac disease. There were no enlarged organs. Splenomegaly is often seen in dermatomyositis. The extremities all revealed non-pitting edema, slight warmth and tenderness, but no redness. Generalized weakness with

pain on extension of the extremities was noted. A particular type of edema, a brawny, non-pitting edema with shiny discoloration over the joints and extensor surfaces is seen in dermatomyositis. I assume this is what this girl had.

The laboratory work is unremarkable. She didn't have an eosinophilia which may be seen with dermatomyositis or trichinosis. There was some concern about hemostasis. The prothrombin time and partial thromboplastin time were normal. The platelets were adequate on smear. This rules out a bleeding deficiency except from platelets or capillaries not functioning adequately. I don't think she had any of these types of bleeding, but she may have been bleeding from a gastric ulcer. This can be a problem with steroid therapy. Her electrophoretic pattern showed a somewhat depressed pattern of all protein fractions with nothing specific. The A/G ratio was inverted. Her serum gamma globulin was low as was her albumin. The creatine phosphokinase was markedly elevated which is expected in severe muscle disease. Creatine phosphokinase is an enzyme which catalyzes the removal of phosphate from creatine phosphate and adds the phosphate to adenosine diphosphate to give adenosine triphosphate. This enzyme is fairly specific for muscle and its concentration is easy to determine. The pathologist doesn't have to worry about hemolysis since it is not in the red cells nor does he have to be concerned about liver disease since the enzyme is not present in the liver in high concentration. The LDH was elevated also but there are at least five isoenzymes that have lactic dehydrogenase activity. Fractionation by electrophoresis is required: usually if the LDH is from a specific organ this can be determined by the electrophoretic fractionation pattern. This girl did not have a specific electrophoretic fractionation pattern.

She continued to have increase in muscle weakness necessitating tracheostomy and gavage feedings. She developed a pulmonary infiltrate which we may assume to have developed secondary to aspiration. Her hemoglobin fell as low as 6.7 gm%. This is beyond what we would expect for generalized anemia associated with collagen disease. We have to say that she was bleeding. Gastrointestinal ulcers are common in children treated with steroids and are frequently seen in children with dermatomyositis or other collagen diseases.

(Continued on Page 47)

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Gastrointestinal ulcers have been found in children with dermatomyositis prior to the availability of steroids. This ulcer could be anywhere in the gastrointestinal tract. It could be in the esophagus where it could have perforated and caused a mediastinitis. It could have been in the duodenum with perforation and peritonitis or she could have bled from a lower gastrointestinal tract ulcer.

Unfortunately steroid therapy is about all we have to offer in treating polymyositis or dermatomyositis. I feel she probably died because of massive aspiration of gastric contents. This is the type of death that is most common in children with polymyositis and dermatomyositis, and is a manner of death seen increasingly with steroid treatment in children who have lasted long enough to have prolonged muscle weakness. I think she had dermatomyositis and it might be academic to argue whether from this protocol we can say that she had polymyositis instead of dermatomyositis. Both can be associated with an evanescent rash. The malar rash seems florid as does the periorbital edema but we don't have a good description of the discoloration over the joints and extensor surfaces.

Dermatomyositis is not necessarily a fatal disease. It can go into remission although exacerbations are common. The children who have the best prognosis have the most subcutaneous calcification probably because it takes time to develop subcutaneous calcification and children with a poor prognosis die too rapidly to develop it.

We would like to have another enzyme determination — an aldolase. It has been stated that the CPK gives us everything in the way of information in muscle disease. This is true except for this one disease — dermatomyositis in which the aldolase is invariably elevated⁷ which is not true of the CPK. Perhaps aldolase is not that useful in this patient since it is elevated in the newborn and does not reach adult levels until adolescence, and it would be anticipated that a three-year old would have a somewhat elevated aldolase. However, I think with dermatomyositis it would have been markedly elevated. In girls also in the first few years of life the aldolase is elevated over the level of boys. It is about 15-35% higher in girls up to age 2 than it is in boys.

The differential diagnosis in this girl would include trichinosis which could be diagnosed by skin test, serum tests and muscle biopsy.

Lupus erythematosus could, of course, produce muscle and joint disease and malar rash. In lupus there should be an elevated gamma globulin which this patient did not have and I'm sure she must have had a negative L. E. preparation. We certainly couldn't rule out rheumatoid arthritis by a negative latex fixation test as mentioned. However, there should be an elevated gamma globulin in rheumatoid arthritis. Moreover, this girl's difficulty was predominantly muscular rather than in joints.

We talked about the difference between dermatomyositis and polymyositis. There are other syndromes that closely simulate either of the above in children. One is congenital agammaglobulinemia which we have seen from the electrophoresis was not present here. With agammaglobulinemia some children have muscle tenderness and weakness, rash, tenseness, and discoloration over the joints particularly over the extensor surfaces but do not seem to have a malar rash. In malignancies in some children there has been a dermatomyositis-like illness with muscle lesions and discoloration over the extremities. The incidence of malignancy is apparently high. In the literature there is an incidence of approximately 18% of children with carcinoma associated with some features of dermatomyositis-like syndrome.⁸ It would be unusual for this child to have malignancy with this sed rate whereas she could have had dermatomyositis with a 23 and 19 mm/hr. sed rate. Dermatomyositis is placed in the collagen disease group simply because it resembles many of our collagen diseases and we have no specific etiology and no specific serum tests except the enzyme tests as mentioned previously. It is felt that dermatomyositis is a hypersensitivity syndrome associated with an altered reaction to a child's tumor cells or perhaps to normal skin and muscle tissue. I think that in this little girl we'll find muscle and vascular pathology that is typical of dermatomyositis and most likely a gastrointestinal ulcer along with gastric aspiration. Are there any questions?

Dr. D. G. Ortmeier*: This child came to the office after approximately two weeks with what I thought was an upper respiratory infection. What finally brought her in was that she complained that her knees and hips were sore. She wouldn't stand up. When placed on her feet she would keep her knees and hips flexed at about 45° like she was squatting and she wouldn't get out of that position. She had a little rash around

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the face, chest, and back when I saw her. We obtained throat cultures thinking this might be a poststreptococcal syndrome. We hospitalized her and gave her aspirin and two days of bed rest. She seemed to improve so I sent her home. Eight days later she was back with the same complaints. It was pretty obvious by this time that this was a little more than a poststreptococcal syndrome.

Dr. W. Anderson:** To me this case was most confusing and most interesting in that I have never had occasion to see a case of dermatomyositis where the whole picture from the very beginning to the fullblown florid condition developed right under one's eyes. As Dr. Ortmeier says, the child originally, as far as we could determine, complained of pain in her knees, hips, and elbows. The edema underneath the eyes was actually a periorbital edema. There was a little redness. When I originally saw her in consultation my note was brief but I was concerned even at that time about the possibility of dermatomyositis or one of the collagen diseases. However, she did not have any type of rash on the hands or over the joints. She was young enough that we could not determine whether she was complaining of muscle tenderness or synovial irritation. We just could not come to a conclusion that it was specific muscle disease or joint disease. It appeared to be primary synovial irritation. At one stage we were concerned whether she might have a spondylitis because when you tried to arch her back, she complained bitterly. However X-rays were negative. Spondylitis may occasionally present like this in a pediatric patient with low grade fever, irritability, who will complain bitterly when moved. After a number of weeks calcification may appear on x-rays. This child did not have a "butterfly" or other rash. Only on the last admission did the child finally have considerable edema and muscle weakness. Of course, she had by then developed dysphagia which was much more specific. Dr. Delwin Ohrt* very wisely on this admission ordered the enzyme studies which showed the marked creatine phosphokinase elevation. Although I had thought of a muscle biopsy as the next step, the marked CPK elevation made it unnecessary.

We also considered a gastrointestinal ulcer. The reason we thought the hemorrhage might be from the nasogastric tube was that she had had the tube in place for a number of days and

there was bleeding from the nose. When we pulled the tube the bleeding stopped. We hoped it might just be irritation. I agree that an ulcer is a good possibility but we couldn't do anything anyway but maintain steroid therapy. The possibility of trichinosis actually did not cross my mind: I found no definite muscle tenderness and there was no eosinophilia.

Dr. Richard Hosen's Diagnoses

1. Dermatomyositis
2. Gastrointestinal ulcer
3. Massive aspiration of gastric contents.

PATHOLOGICAL DISCUSSION

Dr. John F. Barlow: The cause of death was massive bilateral bronchopneumonia presumably secondary to aspiration of gastric contents. There was a shallow esophageal ulcer and a penetrating pyloric ulcer with overlying blood clot. Whether the ulcer was secondary to steroid therapy or part of her disease process or both cannot be determined.

The most striking features of the post-mortem examination were in the skeletal and esophageal muscles which were generally atrophic and



Figure 1.

Marked atrophy of muscle. Note very little inflammation is present.

pale. Sections revealed widespread focal areas of marked muscle fiber degeneration with vacuolar and granular degeneration as well as scattered necrotic fibers. There were many atrophic fibers as well as regenerating fibers. The grouped atrophy of a neuromuscular atrophy was not seen and there were normal muscle fibers — a finding which would be unusual in muscular dystrophy. In addition, pseudohypertrophy, fatty replacement, and central nuclei were not seen as one might expect in muscular dystrophy. Primary pathology in the nervous system was ruled out by normal sections of

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brain, spinal cord, and peripheral nerves. A perplexing feature was the lack of significant inflammation. A few perivascular chronic inflammatory cells were present but the marked inflammatory infiltrate of a polymyositis or dermatomyositis was not seen. We wondered whether this might be a case of dermatomyositis in which the inflammation was modified by steroid therapy. We sent the slides to Drs. E. P. Richardson and Raymond Adams, neuropathologists at the Massachusetts General Hospital and Harvard Medical School in Boston. They thought that the case was polymyositis modified by steroids. They commented on the marked regenerative activity in the muscle fibers.

This child exhibits a myositis of unknown etiology which can affect any age group and

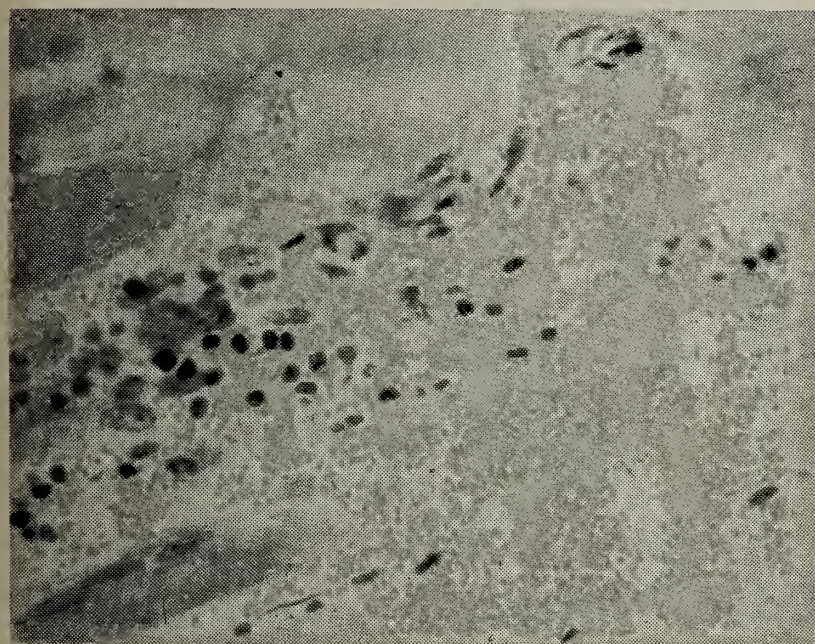


Figure II.

One of rare areas of perivascular round cell infiltration.

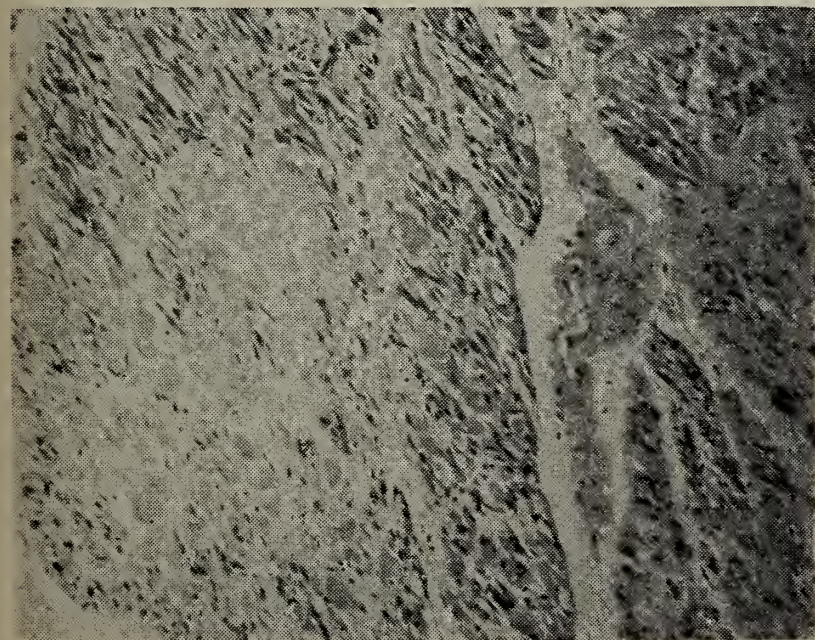


Figure III.

Central area of necrosis in center of many atrophic fibers. The necrotic fibers are pale and stain poorly.

manifest mild to severe symptoms with either a rapid or prolonged course. Many patients recover completely. Walton and Adams have made a classification of polymyositis which points out the variable course and associated symptoms. The only common features are muscle inflammation and destruction and an unknown etiology.

Group I—

Acute with or without myoglobinuria

Subacute or chronic — In childhood

In early adult life

In middle or late life “menopausal muscular dystrophy”

Group II—

Polymyositis with muscular weakness the dominant feature but with evidence of associated connective tissue disease; or dermatomyositis with severe muscular disability and often minimal or transient skin changes.

Group III—

Severe connective tissue disease (rheumatoid arthritis, lupus erythematosus, scleroderma, rheumatic fever, or a combination thereof) with relatively slight muscle disability (polymyositis) or dermatomyositis with florid skin changes and muscular disability of secondary importance.

Group IV—

Polymyositis with carcinoma (carcinomatous myopathy) or dermatomyositis in association with malignant disease.

This case might be classified either as polymyositis or dermatomyositis depending on how much clinical involvement of skin would be necessary for one to call the disease dermatomyositis. However, as Dr. Hosen pointed out, this point is academic.

FINAL ANATOMIC DIAGNOSES

1. Polymyositis, modified by steroid therapy.
2. Bronchopneumonia, bilateral
3. Peptic ulcer, pre-pyloric, acute

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THE SCHILLING TEST FOR PERNICIOUS ANEMIA

The diagnosis of pernicious anemia can be a difficult problem particularly in patients who have been treated with Vitamin B₁₂ or folic acid. Characteristic blood counts can change quickly after very small amounts of either of these substances have been administered. In such patients who also had achlorhydria the physician has been faced with a real dilemma and has had two choices: (1) to continue treatment with B₁₂ and assume that the patient actually has the disease and therefore must be treated for the remainder of his life, or (2) discontinue treatment. In the event he elected to follow the latter course, several years sometimes elapsed before the patient had unequivocal disease and many patients developed serious neurological problems.¹

It has been shown that B₁₂ will prevent pernicious anemia if it can be absorbed through the intestinal mucosa of the distal ileum. Vitamin B₁₂ in food or that administered orally will not be absorbed unless a specific substance, "intrinsic factor," is present. This factor, probably a mucoprotein,² is normally secreted by the gastric mucosa and is absent in the atrophic, achlorhydric stomach of the patient with pernicious anemia.³

By using B₁₂ in which the cobalt atom is radioactive a specific test was developed by Schilling⁵ which aids greatly in the diagnosis of pernicious anemia. Various cobalt isotopes have been used. The original work was with Cobalt-60 (Co⁶⁰); currently however, Co⁵⁷ or Co⁵⁸ are favored because their shorter half lives result in less exposure of the liver to the effects of radiation.³

Principle of the Schilling Test: Radioactive B₁₂ is administered by mouth after a 12 hour fast; immediately thereafter the patient is given 1000 micrograms of ordinary B₁₂ subcutaneously. This is a "flooding dose"¹ and has no actual effect upon absorption of the radioactive B₁₂. However, this massive subcutaneous dose blocks

the fixation of the absorbed radioactive B₁₂ by completely flooding the absorption sites in the liver. Since the absorption sites are occupied by the flooding dose, significant amounts of radioactive B₁₂, which is slowly absorbed over a 12 hour period, are excreted in the urine. A 24 hour urine specimen is **collected** and **measured**, and an aliquot of this urine is counted for radioactivity. If 8-10% or more of the administered radioactivity is recovered in the 24 hour urine specimen, the results are normal, and the patient does not have pernicious anemia. No further tests are needed. However, if low values (2-5% recovery) are obtained, impaired absorption is indicated. The test must be repeated after 48 hours. With this second dose of radioactive B₁₂ the patient is given "intrinsic factor." Another 24 hour urine specimen is collected and measured for radioactivity. Values of 8% or above in the second test confirm the diagnosis of pernicious anemia.⁴

There are a number of important considerations to remember: (1) the patient must not have had therapeutic B₁₂ for at least 48 hours before the test; (2) **all** urine voided in the 24 hours must be saved; (3) urine may be preserved with formalin; (4) radioactive material should not be given to persons under **18 years of age** or to **pregnant women**; (5) in severe renal disease it may be necessary to collect and measure a 48 hour urine specimen; (6) patients with total gastrectomy can react to the test in an identical manner as does the patient with pernicious anemia; and (7) other disease such as sprue, "malabsorption syndromes," celiac disease and some liver disease may show decreased absorption of radioactive B₁₂. In these diseases the results of the second test will also be low because in none of them is the defect due to inadequate "intrinsic factor."³

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URINE MICROSCOPY

The microscopic examination of urine for formed elements is an inseparable part of the routine urinalysis. Few laboratory procedures contribute as much pertinent information as

a careful study of these urine deposits. As early as 1870 Beale wrote,¹ "By observing [casts] we are often able to form a correct notion concerning the nature of changes going on in the tubes at the time the cast was formed." This statement is as true today as it was ninety-five years ago.

THE SPECIMEN

A "clean catch" mid-stream or catheterized urine, collected in a chemically clean or sterile container and delivered immediately to the laboratory is the best possible specimen. The very nature of urine collection and examination makes this specimen extremely susceptible to contamination and, hence, misinterpretation. Labial or vaginal contamination may introduce large numbers of bacteria or yeasts, leukocytes, and red blood cells. The first-voided urine from male and female patients should be discarded since it may contain large numbers of bacteria and pus cells whose presence is due to subclinical urethritis.

THE EXAMINATION

Formerly, simple unstained wet preparations of urine were examined microscopically. However, to accurately quantitate and identify renal casts and cellular elements, the urine must first be concentrated either by centrifugation or filtration, using the filtrand obtained by drawing an aliquot of specimen through a membrane filter. The preparation is then stained with dilute methylene blue or by the Sternheimer-Malbin technique² to aid in differentiating the casts.

SIGNIFICANCE OF FINDINGS

Casts. Hyaline casts are the most common casts found in normal urine. Their numbers may be greatly increased following strenuous physical exertion or diuretic therapy. They are composed of homogenous colloidal material, primarily albumin, and retain the shape of the tubule lumen in which they were formed. Greatly increased numbers of hyaline casts accompany proteinuria associated with renal failure of various types; they are also increased in cardiovascular disease.

Inclusion casts, composed of a hyaline matrix that traps and retains cellular elements present in the tubule at the time of cast formation, give a clearer indication of the cause of renal disease. Leukocyte inclusions most frequently indicate pyelonephritis and when found containing coliform bacteria or associated with bacterial inclusion casts, they are diagnostic of this

disease. Leukocyte casts may also be present in glomerulonephritis and related renal disease. Granular and waxy casts are degenerated leukocyte casts that have remained in the tubule for some time. They have the same origin as leukocyte casts and are associated with more chronic or latent processes. Red cell inclusion casts indicate renal hematuria and are always significant. They may be the only manifestation of acute glomerulonephritis, SBE kidney, renal infarction or collagen kidney.³

Large numbers of renal epithelial casts indicate increased tubule desquamation due to nephrotoxins or renal pelvic inflammation. Occasionally there are a few in normal urine. Various other inclusions are noted in urine concentrates. These include amyloid deposits, broad hyaline casts and pigments. However, their significance is not always clear and further study of the patient is indicated.

Fat bodies and cholesterol esters are occasionally demonstrated in patients with nephrotic syndrome, lupus, glomerulosclerosis and miliary infarction. Hyperlipemia is known to increase the incidence of fatty inclusions.

Cellular elements found in urine most frequently are leukocytes, red cells, epithelial cells and bacteria. Their significance is directly related to their numbers since a few are seen in normal urine. When the number is increased, their source must always be determined. The presence of any of these cellular elements within casts always points to the kidney as their source. White cells, particularly if in clumps, usually indicate purulent inflammatory processes. Red cells may come from any part of the urinary tract and their presence is particularly significant in acute glomerulonephritis.

Many kinds of crystals are seen in urine and are difficult to evaluate. Generally they reflect urine concentration (oxalates, urates, sodium chloride) or current sulfonamide therapy.

In summary, the use of staining and concentration procedures rather than the usual microscopic examination of wet sediment makes the urine microscopic examination a much more meaningful part of the routine urinalysis. The detection of cellular elements and renal casts as occasionally occurs in patients free of symptoms may provide the most important information regarding the patient's renal status.

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DEADWOOD DOCTOR

By

Frank S. Howe, M.D.

CHAPTER IX

Conclusion

A Greenhorn Learns

When the influenza epidemic struck the Black Hills district, I had asked to be accepted into the Army but on account of the scarcity of physicians in this section, my application was turned down. For three months during the fall and early winter of 1918, I had experiences which I never wish myself or anybody else to have again. Besides being in charge of the Deadwood hospital, we put in two emergency hospitals, one at Nisland where we got beds and used the school house for a hospital — this was about 30 miles from Deadwood — the other at Newell, 40 miles from Deadwood, where we secured beds and used the Congregational Church for an emergency hospital. At one time I had three assistants and during the rest of the time two.

I stationed one assistant at Nisland where he was supposed to look after the regular work at Nisland and Newell. I made night trips to these points every second day and also made frequent night calls on families in the intervening territory. For most of the three months' period, I was seeing approximately 100 patients daily.

Those who were very seriously ill in the emergency hospitals were brought to Deadwood where many of them had to be operated on for empyema. At one time I had the entire first floor of St. Joseph's Hospital at Deadwood full of empyema cases that I had operated upon. During this flu epidemic, practically the only drug we had was aspirin. In addition to this we used digitalis, strychnine and other stimulants. Oxygen was unknown at that time. I remember well a Slavonian who had pneumonia following the flu; I saw him in the early evening. I told the nurse in charge of the floor that when he died she should call the undertaker but not under any circumstances to call me as I needed the rest. At that time I was working 20 to 24 hours a day, usually 24. The temperature was well toward zero and as this man was fighting for breath, I threw the window wide open and put him directly in front of the window where he got all the oxygen possible. The next day I asked the nurse what time he died. She said, "Why, he isn't dead. He is still alive." Much to my surprise this patient lived.

I took advantage of this lesson on the need of oxygen and wherever I possibly could (in some cases it was impossible on account of objection from the families) I opened the windows wide open and gave them the cold air treatment. I, without any doubt, saved a number of patients who would otherwise have died. I remember a Slavonian patient who had the appearance of being in excellent condition in the evening when I saw him, although he had flu pneumonia. He coughed and spit up a large amount of what we call prune juice sputum. It looked like pure blood. He took one look at it, turned over and before morning he was dead. This patient died prematurely from fright.

I think the most terrible experience I had during this epidemic was when I was called to a house in Sturgis, 14 miles from Deadwood, in consultation by a doctor there. I found four patients in a small house. One had probably less than an hour to live; another one could not possibly last through the night and a third one had an empyema which had to be operated on. We got everything ready and put him on the kitchen table where the attending physician gave him the anesthetic and I operated on him. The patient lived. The other two, of course, died.

I remember being called to a house near Nisland, South Dakota, where I found nine of the family in bed with flu, all very ill. There was not only insufficient help to take care of these people who were ill but there was no help whatever to take care of the livestock. At no time during the entire epidemic did I muffle my phone or take the receiver down. I made professional calls during the flu epidemic where I had long stairs to climb when I would have to reach down and lift my feet one and then the other up to the next step. It was the only way that I could make them obey my will on account of my extreme exhaustion. I hope that this country will never again see such an epidemic.

In business I was a mere "babe in the woods." At that time Deadwood had a curb exchange where all of the local mining stocks were posted. I had a very private inside tip on a mining stock that was paying dividends. This tip came right from the general manager, so I bought some of the stock. The stock kept going down, but I was told positively that it was only temporary, that they had some changes to make in the mill, so I doubled my holdings, getting my stock much cheaper. I later found that the mine was all worked out and never did run again. The mill burned later. I gained some very good exper-

ience in that investment because I found out two things, the first that inside tips aren't always so good and second, because a mine is paying some dividends is no reason to buy the stock. I hadn't been here long at that time.

I remember well my telling Mr. John Hunter, who later became my father-in-law, about buying this dividend paying stock. He said nothing but I afterwards learned that he was very much amused. Sometime later Mr. Hunter asked me if I had any money in the bank; I told him that I had about \$2,100. He said, "That money is earning you nothing and I am paying interest on money. Why don't you draw it out, and I will give you a note for it and pay you 7 per cent interest the same as I pay at the bank?" I thought that was a very good idea and as he asked me to draw it out in currency, I almost had to force the teller to give it to me. He thought surely I was going to lose the whole thing.

When the note became due, Mr. Hunter asked me how I would like to have some Fish and Hunter Company stock for the money. I told him that if he thought it a desirable investment, it was certainly all right with me. It was years afterward that I finally came to the conclusion that first he borrowed this money in fear that I might find some more mining stocks where I could lose my money and second, that he apparently wanted to get me interested in Fish and Hunter Company, of which company I later became president and still am. Almost everything that I ever learned about business I owe to the wise advice of Mr. Hunter. The sound business methods upon which he organized the Fish and Hunter Company still prevail and are still sound.

In 1944 after I had been a delegate to the State Medical Association for a number of years, I was elected Vice-President and the next year President-Elect, and the following year, President of the State Association. I had the idea of having strictly a South Dakota meeting; in other words, the entire program made up of native South Dakotans. It may be news to some people but it is a fact that we had in South Dakota as native sons many of the outstanding physicians of the nation. Among others are Dr. Alton Ochsner of New Orleans, Dr. John Lawrence, the pioneer in atomic medicine, Dr. Charles Higgins of the Cleveland Clinic, Dr. Harry Armstrong, nationally known, particularly for his work in aviation medicine, Dr. Frederick A. Collier, head of the Department of Surgery at the University of Michigan, Dr. Clarence Mills,

Professor of Experimental Medicine at the University of Cincinnati, Dr. Archibald Nissen of Boston, one of the outstanding leaders in arthritis and related diseases, Dr. George T. Jordan, eye, ear, nose and throat specialist, formerly head of the Department at Loyola University at Chicago. Needless to say, we had a most outstanding program. For the first time in South Dakota, we inaugurated the round table discussions at the noon luncheon, and adopted the rule of having outstanding men preside at the different sessions.

I am a life member of the American College of Surgeons, member of the Academy of Medicine, fellow of the American Medical Association, am in Who's Who in Medicine in the Northwest, Who's Who in Methodism, Who's Who in the West by Marquis, a member of the Newcomer Society of America, and of Phi Chi, honorary medical fraternity.

The changes that have taken place in medicine and surgery during the fifty years that I have been in practice are so outstanding that they are almost unbelievable.

I had been in Deadwood only a short time when my associate decided to operate on an acute appendix. It was his first case of the kind. It fell to my lot to give the anesthetic. At the time I was supposed to be fairly expert in that line. The doctor was assisted by the late Dr. Coburn and after much manipulation, they removed the appendix. I shall never forget Dr. Moffit's words as the patient was put on the cart on the way back to his room. He said, "From now on, the case is yours," and it surely was. I had to take care of this case for months. He, of course, developed pus. It was a slow process but he finally recovered.

My first appendicitis case was a girl with a ruptured appendix which I operated upon with fear and trembling. However, she made a good recovery and as far as I know is still alive. The modern drugs were entirely unknown. Asepsis was carried out fairly well by the younger men but many of the older men and also some nurses, I fear, found it necessary to scratch their noses about the time they got all scrubbed up. Even surgical gloves were unknown when I first started practice. I well remember one of my teachers, Dr. A. J. Ochsner, saying time and again, "My assistants must wear gloves. They do not know how to keep clean. I don't need them. I know how to keep clean."

In spite of the remarkable advances that have been made in both medicine and surgery, we still have many difficult problems to solve.

These will eventually be solved. I cannot help but wonder what the next 50 years will produce in medicine, and just what the span of life will be after 50 more years of medical and surgical advancement.

W. H. FRITZ, M.D.

1907—1967

A sudden heart attack claimed the life of **William H. Fritz, M.D.**, Mitchell ophthalmologist, on January 26, 1967.

He was born November 28, 1907 at Sioux Falls to Doctor and Mrs. W. H. Fritz, Sr. He was graduated from Mitchell High School in 1926, attended the University of Notre Dame, was graduated from the school of medicine at Creighton University, and did graduate work at Harvard University.

Doctor Fritz was a member of the South Dakota Medical Association, and was a past president of the Sixth District Medical Society.

Survivors include his widow, three sons, and a daughter. To them we extend our deepest sympathy.

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THE AMA CONVENTION — AND WHY WE GO

Buckminster Fuller, the American architect-engineer-philosopher-poet, has predicted that education will become the largest and most important of all industries.

He bases this on a belief that knowledge is the one resource of man which not only cannot be depleted, but can, indeed, be consciously increased. In the advanced, automated world of the near future, he says, "leisure" time gained from the workaday world through automation may be spent in the classroom; in fact, people may be paid to go to school.

Physicians have long understood the value of knowledge — of education.

We are forever involved in the task of "keeping up" — without pay it may be noted.

There are few physicians who regard the task as onerous, however. "Keeping up" is part of being a physician; it is a privilege and a responsibility.

A number of reservoirs of medical information may be tapped by the physician. These include colleagues, medical journals, medical news publications, continuing education courses, medical meetings and conventions, drug detail men, and miscellaneous others.

Every year there is the "big show" where the physician can tap practically every reservoir: the Annual Convention of the American Medical Association.

At the 1966 Annual Convention about 600 scientific papers were presented, and nearly 300 scientific exhibits were on display as well as hundreds of industrial exhibits.

No other medical meeting in the world matches the range of subjects presented, from reviews of general medicine to experimental medicine and therapeutics.

The 116th Annual Convention of the American Medical Association will be held in Atlantic City June 18-22 this year. Convention Hall and surrounding hotels will house the Scientific Program; the House of Delegates will meet at the Chalfonte-Haddon Hall Hotel.

Among special presentations planned are four general scientific sessions on backache, healing, patient care, and sex.

The 22 Scientific Sections will offer programs individually, and many will hold joint meetings on subjects of common interest. A full schedule of medical motion pictures is planned. At least five color telecasts will be broadcast, live from a Philadelphia hospital in cooperation with the University of Pennsylvania School of Medicine.

If knowledge is a resource, as Buckminster Fuller says it is, the AMA Annual Convention is surely a mother lode.

P R E S I D E N T ' S P A G E



The State Legislative Session has just adjourned, and a record number of bills were considered which did have, or could have had a definite impact on medicine in South Dakota.

I believe this points up the fact that we, as physicians, must continue to be aware of the political issues both at the state and national level.

We can no longer afford to sit back and watch, but rather we must become involved, even to the point of running for office if one is so inclined.

Preston Brogdon, M.D.
President of the South Dakota State
Medical Association

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News Notes • Changes • Births • News

Pop's Proverb

Beautiful phraseology
never excused an error.

C. Rodney Stoltz, M.D., Watertown, was one of four private practitioners to participate in a postgraduate conference on obstetrics and gynecology at the University of Iowa medical school in January.

Obstetrical management of the diabetic, induced labor and family planning were among the subjects taken up at the conference.

* * *

One of the two new directors of Valley National Bank in Sioux Falls is **W. A. Arneson, M.D.** Dr. Arneson was so named at the recent annual meeting of the bank.

* * *

Chester A. Clark, M.D., assistant director of Homestake's medical department in Lead, South Dakota, has announced his retirement. Dr. Clark joined the Homestake staff in 1952.

He will be replaced by **Layne E. Carson, M.D.**

* * *

A Watertown physician was the recipient of the "Boss of the Year" award presented by the Watertown Jaycees. The physician so honored was **G. Robert Bartron, M.D.**

Several South Dakota physicians recently attended a week-long general practice review held at the University of Colorado Medical Center in Denver.

Doctor C. Wesley Eisele, associate dean of postgraduate education, directed the intensive review, which on successive days covered the fields of internal medicine, pediatrics, surgery, trauma, obstetrics, gynecology, and dermatology.

Among those attending from South Dakota were **Theodore R. Jacobson, M.D.**, Hot Springs; **M. A. Marousek, M.D.**, Belle Fourche; **N. J. Sundet, M.D.** and **L. P. Swisher, M.D.**, Kadoka.

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ANNOUNCEMENT

Children's Hospital, Denver, is holding its Spring Clinics at Vail on June 26, 27, 28, 1967. Guest Faculty: Sydney Gellis, M.D., Tufts University; Mary Ellen Avery, M.D., Johns Hopkins University; Robert Kugel, M.D., University of Nebraska; James K. Weaver, M.D., University of New Mexico; William Daeschner, M.D., University of Texas; Hugh Thompson, M.D., Tucson, District Chairman of Region VIII of the Academy of Pediatrics. Morning seminars and lectures. Afternoons of leisure in the Rocky Mountains. Advances in Pediatrics and The Path Ahead in Pediatric Practice will be the guidelines for the Clinics.

FEE \$40.00. WRITE: Joseph Butterfield, M.D., Children's Hospital, Nineteenth Avenue at Downing, Denver, Colorado 80218.

Mrs. James S. Lydiatt, wife of James Lydiatt, M.D., Hot Springs, was named official Miss South Dakota chaperon at a recent meeting of the Miss South Dakota Pageant board of directors. Her appointment was part of the preliminary plans being made for the event set for June 24-25 this year in Hot Springs.

Mother of three girls and one boy, Mrs. Lydiatt has worked with the pageant corporation as local chaperon and in other capacities. Her job as official chaperon will begin right after the pageant and involves accompanying the new Miss South Dakota to Atlantic City for the Miss America Pageant.

* * *

DR. HAYES COMES HOME

Robert H. Hayes, M.D., Winner, South Dakota, has returned from Viet Nam. Dr. Hayes left last January for duty with the U. S. Public

Health Service in Viet Nam and arrived in Saigon on January 6, 1966.

Upon his return to the United States, he and his family spent a few days in Washington, D. C., during which time they visited with Rep. E. Y. Berry.

* * *

HURON M.D. RECEIVES HONOR

W. H. Saxton, M.D., described as a "doctor of medicine, service, leadership and character," was presented the Citizen of the Year award at the annual meeting of the Huron Chamber of Commerce.

Dr. Saxton was co-founder of the Huron Clinic and has practiced medicine there since that time. He is also past president of the South Dakota Medical Association, member of the American College of Surgeons and of the American College of Obstetrics and Gynecology.



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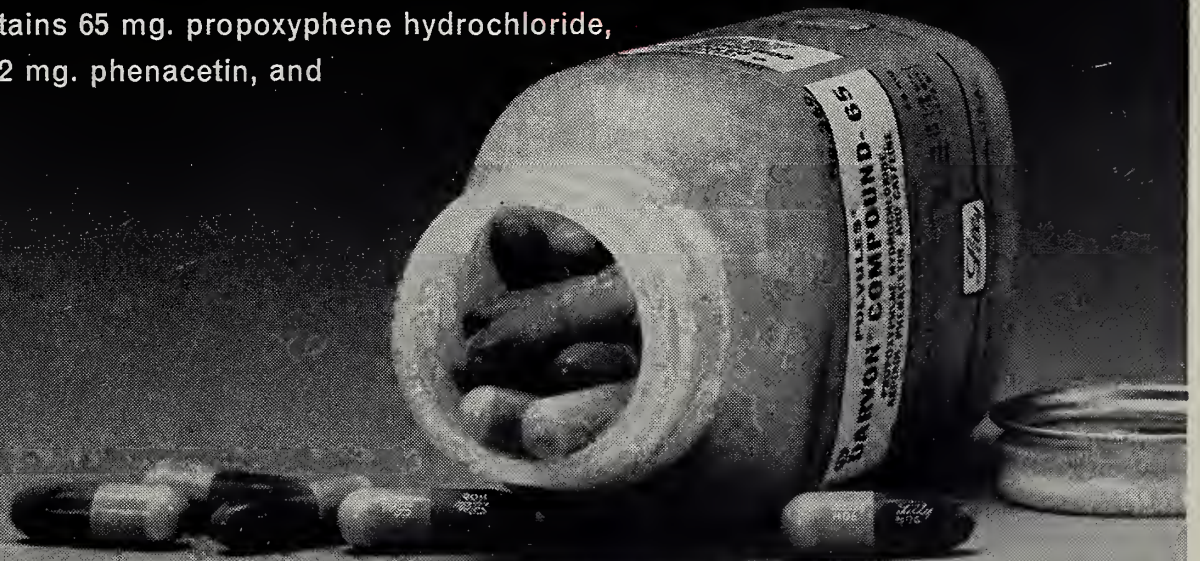
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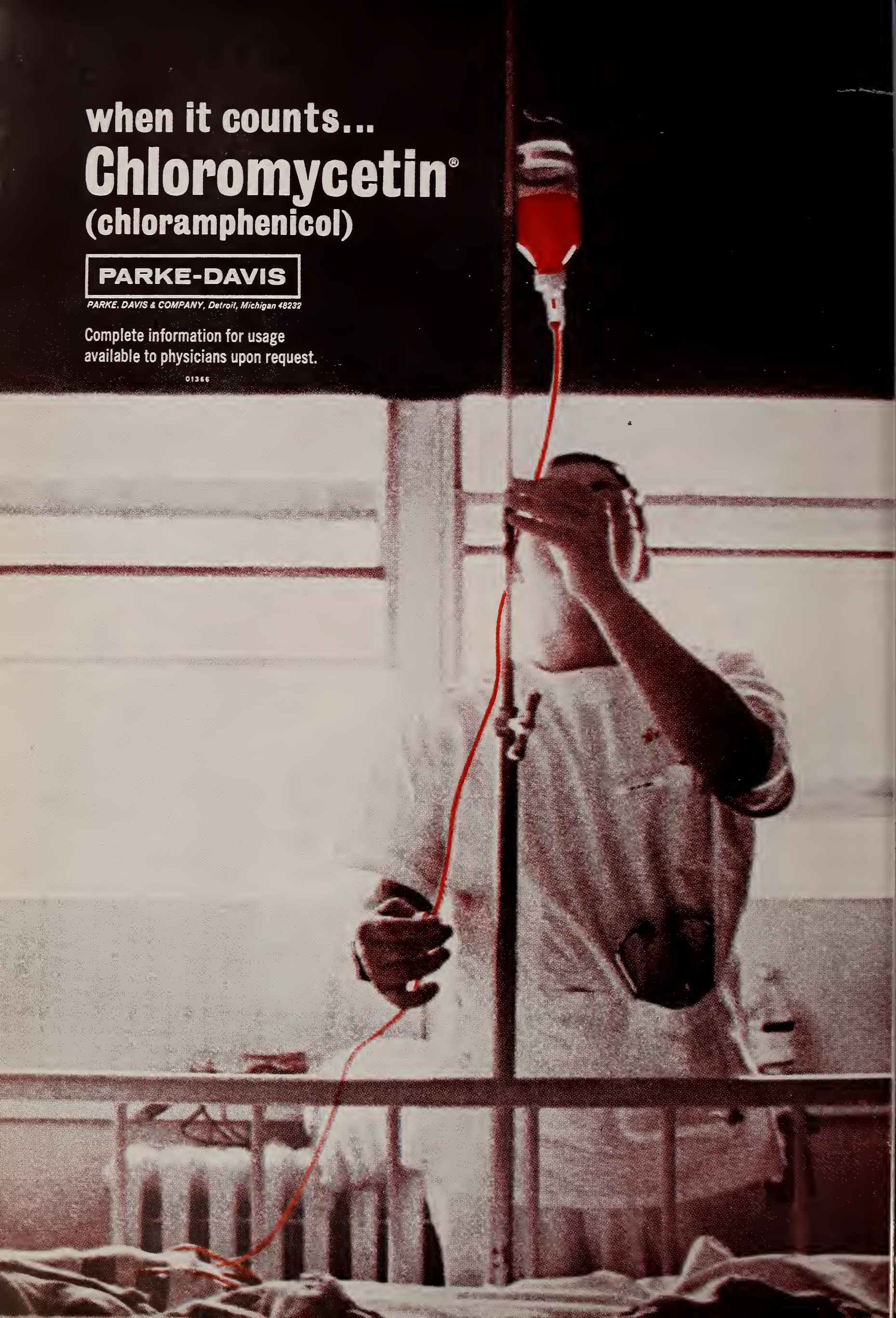
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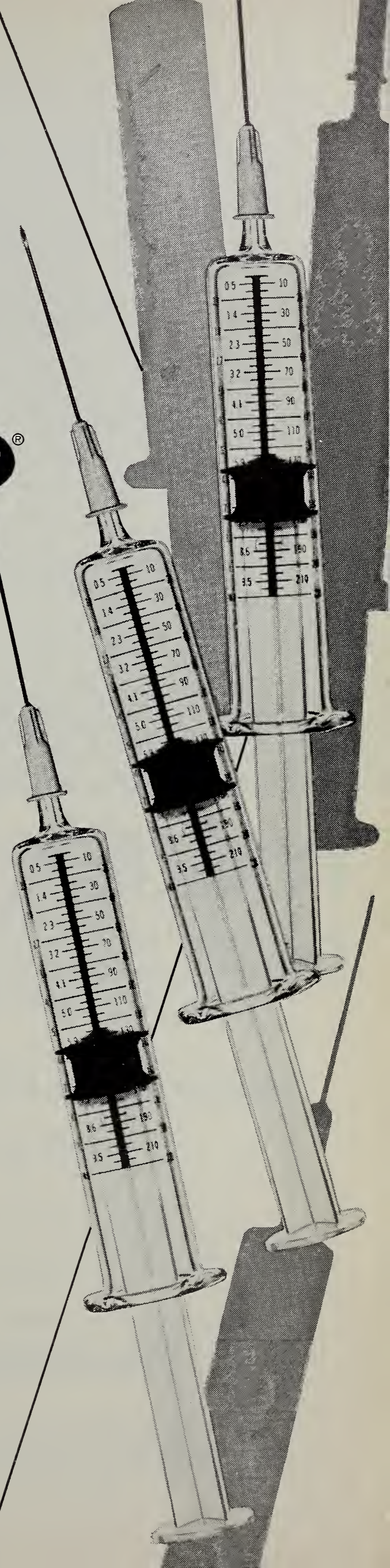
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TRENDS IN MEDICAL EDUCATION AND CARE AND THE UNIVERSITY OF SOUTH DAKOTA SCHOOL OF MEDICINE

George W. Knabe, Jr., M.D.*

Public concern with health is greater now than ever before. There are expectations that more medical care of all types will become readily available and at reasonable cost. Government programs to provide this have been initiated, although the medical resources necessary for their implementation are presently inadequate. In the past few years a number of comprehensive studies have been undertaken to determine how physicians should be educated and trained and how medical care can be most effectively delivered. To evaluate the internship and the residency the American Medical Association created a Citizen's Commission on Graduate Medical Education with John S. Millis, Ph.D., President of Western Reserve University, as chairman.¹ The Ad Hoc Committee on Education for Family Practice was similarly appointed by the A.M.A. to examine the problems and issues involved in preparing physicians for general or family practice.² The Coggeshall Report, "Planning for Medical Progress Through Education," offered suggestions for courses of action to meet anticipated needs of America for medical education and also spoke of the future role of the Association of American Medical Colleges, which sponsored the study.³ These reports and others provided considerable material for discussion at the 63rd Annual Congress on Medical Education convened by the AMA in Chicago February 10 to 14, 1967.

It is clear that significant changes in medical education and practice are occurring and that more will come as a result of recommendations being made. The Citizen's Commission was disturbed by the lack of coordinated supervision of various phases of medical training, citing the fact that medical schools provide undergraduate education, hospitals control the internship

and the specialty boards dictate the manner of residency training. It, therefore, advocated that there be a new Commission on Graduate Medical Education to specifically plan, coordinate and review standards for medical training. It also recommended that the internship be abandoned and that this phase of training be incorporated into the residency or included in medical school. Most of these studies of medical practice stress the need for more "family physicians" and urge medical schools to develop special courses and programs in community medicine or family practice.

New medical schools are being constructed and old ones expanded to meet the need for medical manpower. Numerous experiments with curricula are being conducted. Some institutions have followed the lead of Western Reserve University in adopting an interdepartmental approach wherein medical school departments, instead of offering separate courses of their own, participate in multidiscipline courses designed around systems of the body or disease processes. A number of schools are combining the pre-medical and medical years into a six year continuum, often introducing basic science courses into the premedical years. There is also a tendency toward advancement of substantial clinical instruction into the freshman and sophomore medical school years. A popular innovation is the "core curriculum" which consists of certain basic required courses in each year of school which do not, however, occupy the entire time. The student is then free to select additional courses appropriate to the type of medical career he desires to follow, be it family medicine, specialty practice, research, teaching, administration or a combination of these. This is part of a trend toward individualization of medical education.

These developments have implications for our school. From the time the University of South

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Dakota School of Medicine was established in 1907, it has been dedicated to educating students in the basic medical sciences of anatomy, biochemistry, microbiology, physiology, pharmacology, and pathology; and has provided introductory courses in physical diagnosis and clinical medicine. An integral part of the educational effort has been medical research which has contributed to the advancement of knowledge and the development of teachers and investigators. Services to the state have included postgraduate education for physicians and auxiliary medical personnel. Also, faculty have provided consultation in their special fields of competence. There has been little or no involvement in patient care or health programs since the school lacks the full-time clinical staff and facilities to service such activities.

The medical school has been an asset to the state, providing South Dakota and other students a professional career opportunity which otherwise might be denied them. Its graduates have performed creditably in the four-year schools where they have completed their education, and a significant number have returned to practice in South Dakota. However, the educational program has been hampered by chronic deficiencies of staff and facilities which become more serious each year. The Joint Accreditation Committee of the Council on Medical Education of the AMA and the Association of American Medical Colleges called attention to these at the time of its survey in 1963, stating that salary scales "are critically low and great staffing difficulties may be anticipated in the future if this is not corrected." Nationwide medical school salary surveys still show South Dakota near or at the bottom. Dr. Walter L. Hard, former Dean, called attention to the grave nature of these problems in his letter to the editor in the October, 1966 issue of this Journal.

Medical schools all over are assuming central roles in health planning and service. Surgeon General William H. Stewart has urged they make a stronger commitment to the problems of the community and that programs of teaching, research and transfer of knowledge be fully relevant to the real health needs of the people served. Our two-year school must also respond to social change and public demand. Participation of the medical school is essential, for example, in the Regional Heart Disease, Cancer & Stroke Program in which education of physicians is an important aspect. It should also play an important role in the Comprehensive Health Planning Program of 1966 (Public Law 89-749)

devoted to marshalling health resources in the state. Competence to deal with these and other new responsibilities must be developed without compromising the basic mission of teaching and research. This means expansion of clinical activities, including creation of a division of community medicine or state health services. There should also be greater collaboration between the school and the State Health Department, state health planning agencies and voluntary health organizations. In view of the rapid growth of allied health professions, the University of South Dakota needs to work with other state institutions to develop more and better programs to provide urgently needed paramedical personnel. Continuing education can now proceed on a larger scale than before thanks to advances in educational technology, including television now used advantageously in basic medical science instruction. Liaison with South Dakota State University in the field of veterinary medicine should be explored. Because of the kinship of animal and human diseases, research collaboration here could be profitable; and much veterinary material could be used in teaching of medical students.

With all of this in prospect, one naturally wonders about the feasibility of a four-year medical program being established. It should be noted that all of the newly developing schools plan to eventually offer a full four-year curriculum. The Association of American Medical Colleges estimated that in 1985 there will be 110 four-year schools instead of the present 84; but that there will be only 3 two-year schools, apparently the same three which exist today. Organization of new basic science schools is evidently not being recommended. The Coggeshall Report, for example, finds no justification for establishing more of them. It explains that because basic sciences and clinical instruction and their respective faculties are becoming more intimate and intertwined it is impossible to maintain continuity when the educational program is split between two schools.

Proposals for a four-year medical school in South Dakota have not met with success in the past. The expense of operation and the lack of an adequate source of patients for teaching have been cited as major deterrents. Perhaps equally important has been a lack of accurate information about the real requirements for such a program and of a coordinated and directed effort to promote it. In any case, while a four-year school may not have been feasible in the past there are pressures growing which may force

the school to lengthen its program in the near future. For instance, problems are being created by innovations in curricula in schools where our students complete their training, and it will soon be impossible for them to transfer to some of these schools. Of course, a transfer arrangement could be made with one or several four-year schools wherein our curriculum is tailored to their requirements. This might, however, have the effect of making our institution subordinate to one of another state.

If a four-year medical program is established in South Dakota, it will probably not be entirely in the form of the traditional large new building with university hospital attached. A teaching hospital administered by the university would seem essential but it need not be large. Perhaps an arrangement with presently affiliated hospitals might increase the teaching capacity. There is also the possibility of the state adopting the "university without walls" concept, as in Indiana, with creation of clinical teaching units in medical centers about the state to provide the third and fourth year instruction. An advantage in this would be that the centers could also offer postgraduate medical education and could assist in carrying out certain state and federal health service activities. An entirely different approach would be to utilize the Indian population for teaching. There is no reason why some imaginative alliance with the U.S. Public Health Service could not be developed whereby the educational needs of a medical school could be met while at the same time medical care for the Indian was improved. Under such a program, some medical students might choose public health careers, a thought which should appeal to the Public Health Service. Still another suggestion, made in the 1966 State Legislature, is to explore the practicability of establishing a regional medical school for the states of South and North Dakota, Montana, and Wyoming.

It may be that the wisest approach will be to build a four-year medical program gradually, adding to the present school certain clinical instructional and health service units as they are needed and can be supported. It should be emphasized that no four-year program should be attempted without first greatly strengthening the present school of basic medical sciences. Careful and detailed planning for the future is essential. In view of today's rapidly changing patterns of medical education and health care,

South Dakota must engage now in serious and continuing study of how to support and best mobilize its educational resources to meet the public needs and demands.

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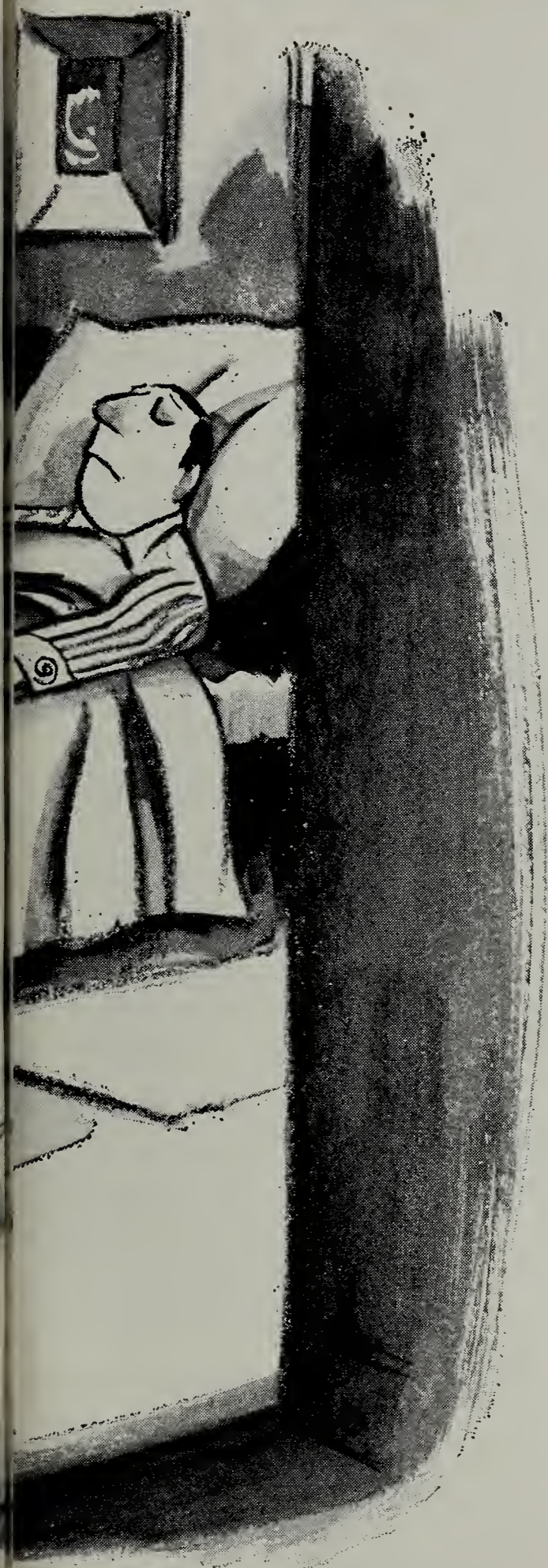
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ON THE PROFESSION OF MEDICINE

Glenn W. Geelhoed
University of Michigan
Medical School

June 1, 1966

Prize Winning Essay

Norman A. Welch, M.D.
Medical Ethics Essay Contest
1966

What does it mean to follow a profession? Medicine is widely called a profession, yet the term profession connotes several different meanings. It would be interesting to note what meanings the term has and in what senses they are applied to medicine. I should like to analyze and describe four uses of the term profession and examine implications the applicable meanings have for the ethics of the medical profession.

First of all, the term profession can mean the following of an occupation as a means of livelihood or for gain. In this sense a profession is simply a means for making a living. Uses of the term in this sense are common, as in a professional pugilist, or a professional driver who makes a living by driving a truck. That there is nothing innately noble about the term profession when so used is seen in its use to describe criminals, such as a professional safe-cracker. Another example can be noted in its application to certain women who are said to practice the "world's oldest profession."

The word professional can also imply a certain expert mastery or competence in almost any field. There it is used as the opposite of "amateur." The popular advertising motto "the best is always pro" is an illustration of the term in this sense. A combination of special abilities is implicit in this sense of the word and standards of behavior and achievement are concomitant features. Several professions by the first criterion of the term "means for making a living" have acquired a subspecialized meaning in the second sense of the term by superimposing the adjective "learned." The "learned" professions have an inherent set of requirements that place them beyond the practice of anyone who might wish to make a living by them. There is also a recognized method for achieving the

skills or knowledge that set professions apart from other occupations. No qualitative difference has separated the second sense from the first, but merely a quantitative level of know-how.

A third sense in which the term profession is used involves following as a business an occupation ordinarily engaged in as a pastime, or making a business of an office not properly to be regarded as a business. Examples of the former would be golf, ski, chess, or tennis pros; an example of the latter would be a "professional politician." In the former case there is a note of dilettantism, a "playing at" an occupation as though it were a hobby in which one had acquired sufficient proficiency to warrant payment. The latter case evinces a betrayal of a trust, a taking advantage of a responsibility to one's own profit.

And last, there is the sense of the term profession that means a calling, an avowal or declaration that one "stands for something." The "professor" is a defender of principles to which he adheres. The term profession is used in religion to refer to that outward declaration of a faith in doctrine and ideals, using the term in this same sense.

Of these four meanings, which applies to the profession of medicine? Since almost all physicians depend upon the practice of their art for their livelihood, medicine is a profession in the first sense. As in the other crafts and trades included in the first sense, the physician makes a living by offering his commodity of medical service as an item of exchange. Unlike the majority of the crafts which are its fellows under the first criterion, medicine is a profession that commands more than a living; it has a high return value that is often the first thing that strikes the eye of the young aspirant. The re-

spect and reward that are given to the doctor as artisan (cf. **der Arzt**) may be due to the demand and value of his commodity as estimated by the consumer, or it may follow additionally from the higher requirement levels seen under the second sense of the term profession.

By the second criterion, medicine is indeed a learned profession, and one that requires a specialized expertness of no mean achievement. This refinement of the profession is but a quantitative step above the first level; however, the division is not a qualitative one but merely a measure of cleverness. A technician can function at whatever level he seeks, since there is no morality that necessarily advances with the sophistication of technology. There are technicians (who are professional in both first and second senses) in medicine who wash glassware, technicians who draw blood, and some who remove appendices, all within the same spectrum of measured skill.

The third sense of the term profession enters into the consideration of those who consider a profession "the gentlemanly thing to do." A profession in this third sense is what one follows to avoid doing manual labor, and offers the dilettante a respectable perch from which to view the world and select items for smattering. A popular version of this among young physicians is medical gamesmanship. More despicable than those who play at medicine are those who play it for their own advantage and enjoy the peculiar type of power with which physicians are entrusted.

It is only when we reach the fourth and last sense of the term profession that we face what it is that medicine stands for. A hard look at the practice of medicine while standing upon this highest rung of the ladder in the definition of their profession may convince many physicians that they do not have a profession in this final sense, for in medicine what is to profess? If medicine be a calling, to what are we called? For the ethical standards and goals medicine professes, some knowledge of the historical heritage that has contributed to the profession in this peculiar sense is necessary.

One of the earliest and still most articulate examples of the qualities that constitute the true profession of medicine is found in a Socratic dialogue in Plato's **The Republic**. Thrasy-machus is inquiring into reasons why it is that men work. He has just decided that all men, including the ruler in even the ideal state, would be motivated only by self-interest in the power that would accrue to the person in the profes-

sion and in the living he would make. Socrates stops him short:

"Enough of this banter . . . Tell me this: Is the physician of whom you spoke as being strictly a physician, a maker of money, or a healer of the sick? Take care you speak of the **genuine** physician."

"A healer of the sick," replied Thrasy-machus.

But, Socrates now asks, aren't you neglecting the fact that each of the individuals who practices medicine has a primary interest in making a living, as in the first sense of the term profession?

"Has not each of these persons an interest of his own?"

"Certainly."

"And is it not the proper end of their art to seek and procure what is for the interest of each of them?"

"It is."

Through further questions, Socrates develops an alternative thesis that the goal of medicine is in the practice of it; that the refinement and expertness of the art is the goal to be pursued and enjoyed as an end in itself. Taking pleasure in the expertness of medical practice would qualify it as a profession in the second sense of the term. Or **ars gratia artium** might be the self-sustaining energy loop that would justify medicine's definition as a profession to the casual practitioner who is seeking a profession in the third sense.

"Have the arts severally any other interest to pursue than their own highest perfection?"

"What does your question mean?"

"Why, if you were to ask me whether it is sufficient for a man's body to be a body, or whether it stands in need of something additional, I should say, certainly it does. To this fact the discovery of the healing art is due, because the body is defective, and it is not enough for it to be a body. Therefore, the art of healing has been put in requisition to procure what the interests of the body require. Should I be right, think you, in so expressing myself, or not?"

"You would be right."

"Well then, is the art of healing itself defective, or does any art whatever require a certain additional virtue; as eyes require sight, and ears hearing, so that these organs need a certain art which shall investigate and provide what is conducive to these ends: is there, I ask, any defective-

ness in an art as such, so that every art should require another art to consider its interests, and this other provisional art a third, with a similar function, and so on, without limit? Or will it investigate its own interest?" . . .

"Apparently it is so," he replied.

"Then the art of healing does not consider the interest of the art of healing, but the interest of the body."

"Yes."

Since it appears that our limitation of the profession of medicine to any of the first three senses of the term is no longer tenable, for what good does medicine stand?

"Well, but you will grant, Thrasy-machus, that an art governs and is stronger than that of which it is the art."

Thrasy-machus assented with great reluctance to this proposition.

"Then no science investigates or enjoins the interest of the stronger, but the interest of the weaker, its subject."

To this also he at last assented, though he attempted to show fight about it.

"Then is it not also true, that no physician, insofar as he is a physician, con-

siders or enjoins what is for the physician's interest, but that all seek the good of their patients? For we have agreed that a physician strictly so called, is a ruler of bodies, and not a maker of money; have we not?"

Thrasy-machus agreed that we had.

Socrates concludes with the ethical principle that has dominated the subsequent tradition of medicine. We distinguish man **qua** wage-earner from man **qua** professor of medicine. Only in the fourth sense of the term does medicine rise to a truly noble profession. And what is the good that medicine professes? The good of its objects which are other than they who practice the art and which is external to the art itself. And what are the objects of medicine's service? The patients, the society, in a word—man.

"And thus, Thrasy-machus, all who are in any place of command, insofar as they are rulers, neither consider nor enjoin their own interest, but that of the subjects for whom they exercise their craft: and in all that they do or say, they act with an exclusive view to **them**, and to what is good and proper for **them**."

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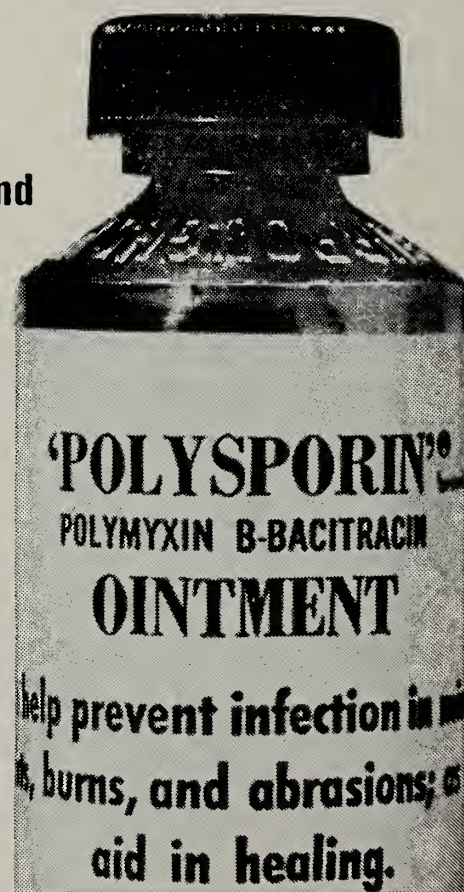
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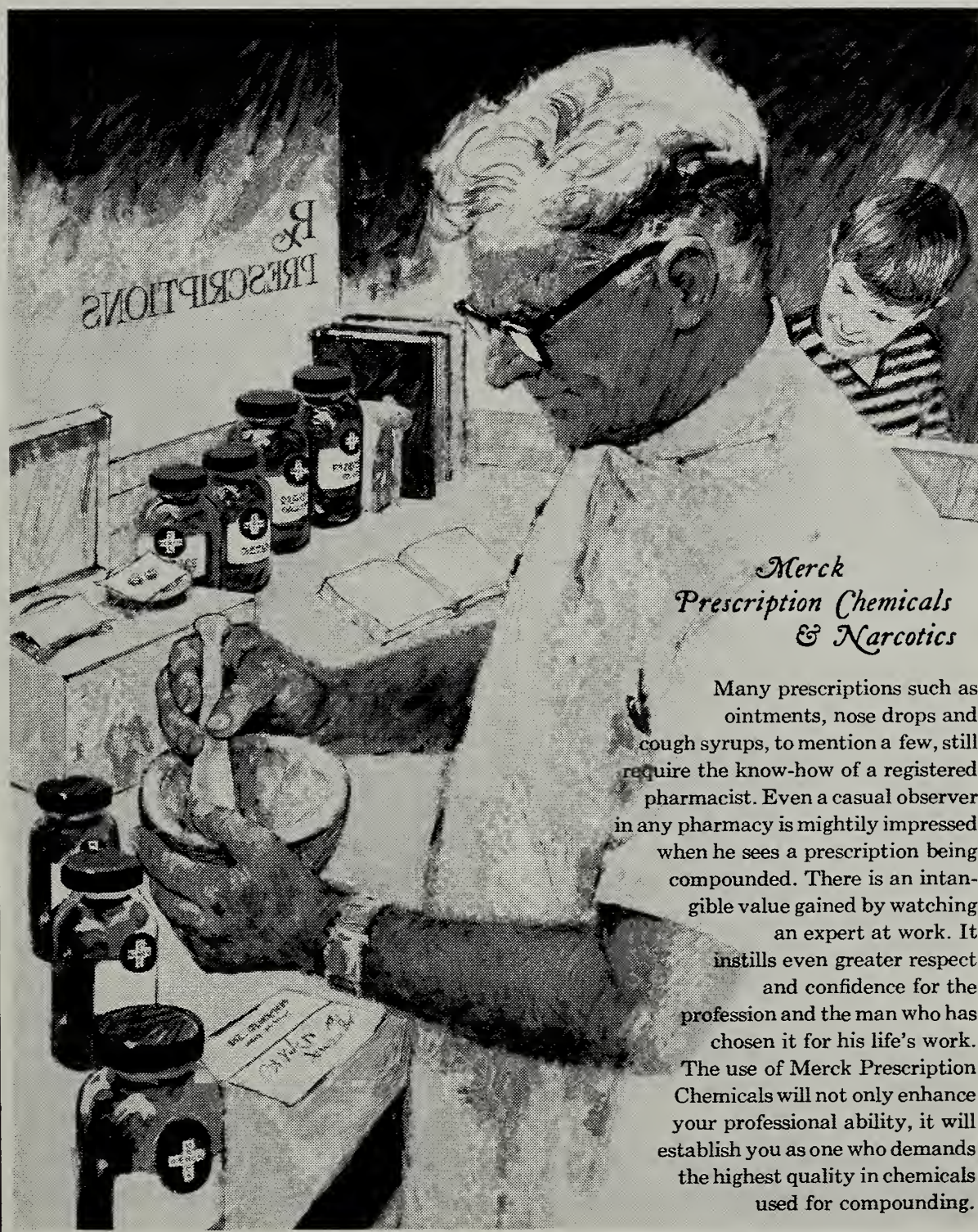
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Hypofibrinogenemia: Its Diagnosis and Treatment In the Obstetric Patient

By Joseph S. Betts, M.D.
Ann Arbor/Fort Meade, Maryland

Hemorrhage during pregnancy continues to be a major cause of fetal and maternal morbidity and mortality, but until comparatively recently the importance of aberrations in the clotting mechanism was not recognized as a factor in serious obstetric hemorrhage. The literature, however, now contains many reports of the various bleeding diatheses which develop in conjunction with certain obstetric complications.^{3,4,5}

The most common and important of these is fibrinopenia. Explanations for the reduction in available fibrinogen during pregnancy have been discussed. In brief, the entrance of thromboplastin, or a thromboplastin-like substance, from necrotic decidua at the placental site or from amniotic fluid into the maternal circulation is presumed to be the basic cause. Thromboplastin unites with maternal fibrinogen to form fibrin which is deposited in small vessels throughout the circulatory system. If the infusion of thromboplastin continues, all the available fibrinogen may be utilized, and a significant disposition to hemorrhage is created.

Russell¹ in 1959 stressed that the successful management of acute hemorrhage in obstetric patients requires a rapid, orderly and systematic sequence of procedures. He designed a flow sheet to help accomplish this in obstetric coagulation problems.

The purpose of this discussion will be: (a) to enumerate the pregnancy complications most often associated with hypofibrinogenemia; (b) to discuss the clinical evaluation of fibrinogen levels; (c) to survey our experience with hypofibrinogenemia in the Department of Obstetrics

and Gynecology at the University of Michigan during the eight-year period, 1956-64; and (d) to suggest a protocol for management of patients with the complications responsible for hypofibrinogenemia.

The obstetric complications most often associated with hypofibrinogenemia are abruptio placentae, intrauterine fetal death during the second trimester of pregnancy (particularly if the baby died from erythroblastosis fetalis)² and amniotic fluid infusion. The latter is a rare, but often fatal complication.

At the Sloane Hospital for Women 12 per cent of the cases of hypofibrinogenemia followed postpartum hemorrhage. Hypofibrinogenemia also may develop in women with placenta previa, placenta previa accreta, intrauterine infection, after injection of certain abortifacients into the uterus (especially liquid soap), with hydatidiform mole, after Cesarean section, and even after normal vaginal delivery.

EVALUATION OF LEVEL OF FIBRINOGEN

The normal range of fibrinogen during the last few weeks of pregnancy is 300-600 mg per 100 ml of whole blood. Any level below 100 mg per cent may be associated with a hemorrhagic diathesis. There are four methods by which the fibrinogen level can be determined. All of these tests are valuable; some fit specific clinical circumstances better than others.

Clot Observation Test: Clot observation is a simple qualitative test which can be performed in any hospital. The main defect in this test is that it does not detect minor changes. A five milliliter sample of blood is placed in a test tube and observed for clotting. Under normal conditions a clot forms within six minutes and retracts to 30-40 per cent of the original volume in one hour. The clot is firm and withstands shaking. If the blood fails to clot within six min-

Doctor Betts, associated with the Department of Obstetrics and Gynecology at the University of Michigan School of Medicine, is now with the Kimbrough Army Hospital, Fort George G. Meade, Maryland. Reprinted with permission from **Michigan Medicine**, September, 1966.

utes, or if the clot that does form is soft and subsequently disintegrates, the clotting mechanism is defective.

If a stable clot forms in less than six minutes, the fibrinogen level is probably greater than 150

Proper management of all medical emergencies requires preparation prior to the emergency. This article completely discusses the diagnosis and treatment of the obstetrical catastrophes most commonly complicated by hypofibrinogenemia. Emphasis is placed upon having an orderly preconceived plan for management of these complications. Several case reports are included from the experience of the Department of Obstetrics and Gynecology at the University of Michigan Medical Center.

Fibrindex Test: The Fibrindex test* is simple to perform and interpret. Fifty units of thrombin are mixed with 1 ml of oxalated blood and observed for clotting. In contrast to the clot observation test, any clot formation within one minute after mixing indicates that the patient has a fibrinogen level of at least 100 mg per cent. If there is no clot formation in one minute, the test is said to be positive; the fibrinogen level is below 100 mg per cent. This test is always run in parallel with the blood of a normal pregnant patient which serves as a control. Because the Fibrindex test may be done rapidly, and because it has a definite endpoint, it is more useful in an emergency than the clot observation test.

Quantitative Fibrinogen Level: Neither the clot observation test nor the Fibrindex test measures actual plasma fibrinogen levels, so neither can be used to measure changes in fibrinogen concentration over a period of time which would permit us to anticipate clotting abnormalities before they actually develop. Both the quantitative fibrinogen level and the fibrin titre technique described by Schneider⁷ can be utilized for this. The quantitative fibrinogen level is complicated, taking at least an hour to run, and few hospitals are able to do it on either a serial (several on one case) or emergency (night or weekend) basis.

Fibrin Titre Technique: The fibrin titre technique (Table I) is a simple serial dilution of whole blood with thrombin added as a catalyst. The dilutions are so adjusted that each dilution correlates with milligrams per cent of fibrinogen in whole blood. If clotting occurs through the fifth tube, the titre is 1:200 and the patient has at least 200 mg per cent fibrinogen, but less than 400 mg per cent, and so on. This test can be performed easily, with results available in 20 minutes. The semiquantitative fibrin titre is the best test available for serial evaluation of fibrinogen levels in an acute situation when the development of hypofibrinogenemia might be anticipated.

*Fibrindex — Ortho Pharmaceutical Corporation, Raritan, New Jersey.

mg per cent. If a clot fails to form within 30 minutes, the level is less than 100 mg per cent. A fragile clot which fails to retract is evidence of a reduction in fibrinogen, but the exact level cannot be determined by this test.

UNIVERSITY OF MICHIGAN EXPERIENCE (1956-1964)

Between January 1, 1956, and December 30, 1963, 14,000 women were delivered in the Women's Hospital of the University of Michigan Medical Center and hypofibrinogenemia was diagnosed ten times. Hypofibrinogenemia was recognized in nine women with severe abruptio placentae and in one with an intrauterine fetal death. Two other patients, one with amniotic fluid infusion and another with postpartum hemorrhage from uterine atony, were delivered elsewhere and transferred to the medical center for treatment of the complication.

The clinical course of each of these 12 patients is summarized in Table II. Case summaries of patients with abruptio placentae, intrauterine fetal death, postpartum hemorrhage, and the amniotic fluid infusion syndrome are presented, and a protocol for management of these obstetric complications is suggested.

TABLE I.
Fibrin Titre Technique

Purpose:	Rapid, semiquantitative fibrin determination.
Materials:	Rack of Kahn tubes, (1 ml) tuberculin syringe, Topical thrombin solution (20 units thrombin per drop of 50% glycerol-water solution), and Ringer's solution.
Method:	(1) Place Ringer's solution in tubes: #1 tube—0 ml; #2 tube—3 ml; #3 tube—4 ml; and 1 ml to each of the others up to a total of 8 tubes. (2) Draw 1 ml blood with tuberculin syringe. (3) Place 0.5 ml blood in first tube. (4) Place 0.5 ml blood in tube #2, mix and transfer 1 ml to tube #3, mix and transfer 1 ml to next tube; repeat with each succeeding tube. (5) Add 20 units (1 drop) topical thrombin to each tube and tilt each once. (6) Read titre in 15-30 minutes. Dilutions are 1:10, 1:50, 1:100; 1:200; 1:400; 1:800; and 1:1600.
Reading:	Titre values of 50, 100, 200, etc., correlate fairly well with mg per 100 ml of plasma.

ABRUPTIO PLACENTAE

Case Summary: G.B. 265643, age 21, Caucasian, Gravida 3, Para 2, type O Rh negative, was admitted at term soon after she was awakened by severe abdominal pain and moderate bright

vaginal bleeding. Her blood pressure on admission was 90/60, the pulse rate was 120/minute, and fetal heart sounds could not be heard. The blood pressure dropped to 40/0 but, responded to intravenous saline, Trendelenburg position and blood transfusions. The urine was clear yellow with 1+ protein reaction. A fibrin titre was positive at 1:400. Palpation of the abdomen revealed a rigid, irritable, tender uterus. The cervix was soft, 2 cm dilated and the head was at station —3. The membranes were artificially ruptured.

During the next two hours, the patient was given 2000 ml of whole blood. There was little visible bleeding, but the pulse remained above 100 and the blood pressure about 90/60. The fibrin titre dropped progressively to 1:50 and she was given a rapid intravenous infusion of 6 gm of fibrinogen. Since labor had not progressed, she was delivered of a 7 lb. stillborn male infant by Cesarean section. The placenta had separated completely. Because of continued depression of the titre (1:100) and bleeding, the patient was given 2 more gm of fibrinogen after which recovery was uneventful.

Management of Severe Abruptio Placentae: The clinical diagnosis of acute severe abruptio placentae is generally made on the basis of abdominal pain associated with a tender, irritable, sometimes rigid uterus in the third trimester of pregnancy, with or without bright red vaginal bleeding.

The infant usually dies shortly after the placenta separates, but the inability to hear the heart sounds is not definite proof of fetal death.

A fetal electrocardiogram may be helpful in determining whether the infant is alive. The examination should not be performed until the condition of the mother has been assessed and her treatment started.

The first step in the management of a patient suspected of having premature placental separation is to draw blood for hematocrit, cross-match and clotting studies. Blood loss can be massive (greater than 3000 ml), and one must be prepared to administer large quantities of blood rapidly. An intravenous infusion of saline is started through a 15 gauge needle or a large cannula which is inserted when blood is drawn for preliminary laboratory examinations.

Sterile vaginal examination is performed to determine fetal position and the status of the cervix. The membranes are artificially ruptured to induce or stimulate labor and also in an attempt to diminish thromboplastin dissemination into the circulation. Presumably, evacuation of amniotic fluid effectively compresses retroplacental sinusoids and therefore reduces the rate at which thromboplastin from the necrotic decidua and retroplacental clot enters the maternal circulation. The membranes should usually be ruptured even though the conditions are unfavorable by the usual criteria. An indwelling Foley catheter is placed in the bladder in order to permit periodic determination of urinary output.

Table III presents an outline for the management of abruptio placentae. If delivery is not imminent, the fetal heart sounds are normal, and the pregnancy is of at least 35 weeks' dura-

TABLE II.

Pat't	Age	G/P	Gestation	Complication	Blood Type		Fibrinogen	Therapy			Outcome	
					ABO	RH		Bld.	Fibgn.	Delivery	Fetal	Maternal
938215	24	1/0	37 weeks	Abruptio Placentae	O	Pos.	Fibrindex 90 mg. %	2 U	6 gm.	Vaginal	Stillbirth	Good
D.M.												
604633	25	3/2	36 weeks	Abruptio Placentae	O	Pos.	Fibrindex	2 U	6 gm.	Vaginal	Stillbirth	Good
B.D.												
908910	21	2/1	39 weeks	Abruptio Placentae	A	Neg.	Fibrindex 80 mg. %	2 U	6 gm.	Vaginal	Stillbirth	Good
P.V.												
296200	23	4/3	33 weeks	Abruptio Placentae	A	Neg.	"No Clot"	7 U	6 gm.	C/S	Stillbirth	Good
V.L.												
285865	22	3/2	34 weeks	Abruptio Placentae	A	Neg.	Titre 1:10	5 U	8 gm.	C/S	Stillbirth	Good
C.L.												
265643	21	3/2	39 weeks	Abruptio Placentae	O	Neg.	Titre 1:10	5 U	8 gm.	C/S	Stillbirth	Good
G.B.												
992877	39	2/1	38 weeks	Abruptio Placentae	B	Neg.	"No Clot"	0	0	C/S	Good	Good
E.S.												
038088	30	2/0	40 weeks	Abruptio Placentae	AB	Neg.	Titre 1:100	2 U	0	C/S	Good	Good
R.H.												
944804	25	2/1	28 weeks	Intrauterine Fetal Death	O	Neg.	70 mg. % 90 mg. %	0	0	Vaginal	Stillbirth	Good
A.G.												
597991	47	8/7	40 weeks	Abruptio Placentae	O	Pos.	"No Clot"	8 U	6 gm.	Vaginal	Fair	Good
D.C.												
458820	29	1/0	40 weeks	PPH from Uterine Atony	O	Neg.	Fibrindex	16 U	5 gm.	Vaginal	Good	Good
B.R.												
047793	43	8/7	43 weeks	Amniotic Fluid Embolism	AB	Pos.	"No Clot"	6 U	6 gm.	Vaginal	Poor	Fatal
E.M.												

TABLE III.
Abruptio Placentae
Third Trimester Management

Diagnosis Is Made by:	Initial Management:	Plan for Delivery:
Abdominal Pain	Rupture Membranes	VAGINAL DELIVERY Fetus Alive Progressive Labor Minimal Clotting Derangement Replaceable Bleeding Stable Vital Signs
Tender Irritable Uterus	Fibrindex Followed By Serial Titres	Fetus Dead Progressive Labor Correctable Clotting Derangement Replaceable Bleeding
Vaginal Bleeding	Blood Transfusion If Indicated	CESAREAN SECTION Fetus Alive Poor Labor Progressive Fall in Titres Continued Bleeding Fetus Dead Poor Labor Progressive Fall in Fibrinogen Titre Fibrinogen \downarrow 100 mg. % Profuse Bleeding

tion, an immediate Cesarean section is indicated in the interest of the baby. If the heart sounds are irregular, or if there is question as to the condition of the infant, emergency Cesarean section should usually not be done because the infant will either be born dead or may have suffered extensive damage from anoxia.

If the uterus is tender and rigid and the fetus is dead, blood transfusion is indicated even though there has been little visible bleeding. As much as 3000 ml of blood can be concealed within the uterus, and if one waits for evidence of shock before starting transfusion, a coagulation defect, renal failure, or even death may result. Initially 1000 ml of whole blood, plus an amount equal to the visible blood loss is administered. Thereafter, blood replacement is based on the patient's vital signs, the amount of external bleeding, serial hematocrits and blood volume studies.

As the blood transfusion is being started, 8 gm of fibrinogen should be obtained and the diluent warmed to room temperature. The operating room must be notified that there is a possibility of an emergency Cesarean section. An anesthetist should be available.

If the Fibrindex test is negative (normal clotting), a quantitative test for fibrinogen should be ordered because the actual concentration may be considerably reduced even though the Fibrindex test indicates normal clotting. Fibrinogen determinations should usually be repeated, even though the initial reading is normal, because the concentration is likely to fall progressively until the uterus is emptied.

Labor may begin promptly and terminate rapidly after artificial rupture of the membranes, but if it does not, oxytocin stimulation should be considered. Stimulation should be carefully monitored since uterine response may be unpredictable. However, effective labor can usually be induced even though massive myometrial hemorrhage has occurred. If the vital signs can be kept stable by transfusion and if the hemostatic mechanism remains intact, it is safe to observe closely and await vaginal delivery.

Cesarean section is indicated when delivery does not appear to be imminent and any of the following are present: an abnormal clotting mechanism, continued bleeding requiring transfusion, or a progressive fall in blood fibrinogen levels. If the level is above 100 mg per cent when the operation is performed, it usually is not necessary to give additional fibrinogen. If the level is less than 100 mg per cent, however, 6 gm of fibrinogen should be administered immediately prior to operation.

If one elects to replace fibrinogen and await delivery, the fibrinogen level must be checked at least every two hours. Dysfunctional labor is a contraindication to vaginal delivery unless it responds promptly to oxytocin stimulation. A long time lapse may necessitate the injection of large amounts of fibrinogen, with the real danger of subsequent serum hepatitis if the patient survives. In addition, hemorrhage into vital organs, especially the brain, with extensive destruction of irreplaceable tissue, may occur unless the coagulation defect is corrected. After

the placenta is removed, the liver rapidly replenishes fibrinogen at the rate of about 350 mg per hour.

INTRAUTERINE FETAL DEATH

Case Summary: A.G. 944804, age 25, Caucasian, Gravida 2, Para 1, type O Rh negative, had an initial Rh anti D indirect Coombs antibody titre of 1:2048. She also had overt diabetes which had become manifest during this pregnancy. The values of a glucose tolerance test were fasting blood sugar 100 mg per cent and two hour 200 mg per cent. Her first infant had died in utero at the 37th week of pregnancy. During this pregnancy, fetal heart tones were never heard after the 24th week. Repeated quantitative fibrinogen determinations demonstrated a drop from 190 mg per cent at the 26th week to 90 mg per cent at the time of delivery at the 28th week. However, there was no excessive bleeding and no replacement was necessary.

Management of Intrauterine Fetal Death: Fetal death in utero in the first trimester of pregnancy is rarely complicated by clotting abnormalities. However, hypofibrinogenemia develops in one-third of patients if fetal death occurs after the 16th week and the products are retained longer than four weeks.²

Dilation and curettage has been our usual management of missed early abortion if the products are not expelled spontaneously. Before the curettage is carried out, the patient's clotting status must be assessed by measuring the fibrinogen concentration and bleeding, clotting and prothrombin times.⁸ If no clotting abnormality is apparent, then the procedure can usually be carried out with safety. 1000 ml of fresh whole blood and 8 gm of fibrinogen should be in the operating room before the procedure is begun.

The accepted management of late intrauterine fetal death has been observation until the spontaneous onset of labor. Until recently, there has been no safe method of inducing labor in these cases. Now, in properly selected cases, we can induce labor, with relative safety, by injection of a hypertonic salt solution into the amniotic sac. When a late intrauterine fetal death has occurred, we assess the clotting mechanism each week. We induce labor with intra-amniotic hypertonic saline if it does not occur spontaneously after three weeks of fetal death.

If a clotting defect is discovered, it must be corrected before any procedures to empty the uterus are attempted.

POSTPARTUM HEMORRHAGE

Case Summary: B.R. 058820, age 29, Caucasian, Gravida 1, Para 0, type O Rh negative, de-

livered a healthy term infant in another hospital after an uncomplicated antenatal course and a two-hour labor. She immediately began to bleed profusely, presumably from an atonic uterus and two vaginal lacerations. After 10 units of blood had been administered, her blood failed to clot and a Fibrindex test showed a coagulation defect. Two grams of fibrinogen were administered, and the uterus was removed. During the operation, she was given more blood and fibrinogen because of bleeding from the pedicles. Postoperatively, she developed pulmonary edema and renal failure and was transferred to the University of Michigan Medical Center where she developed a pelvic abscess, sacral palsy and pyelonephritis from which she was recovering when she was discharged nine weeks after delivery.

Management of Postpartum Hemorrhage: Postpartum hemorrhage occurs frequently, and its treatment is well outlined in standard obstetric texts. The hemorrhage can usually be controlled by evacuating the uterine contents, massage, uterine elevation and oxytocics. Continued bleeding indicates the need for re-examination in search of an overlooked uterine, cervical or vaginal laceration. Blood loss must be replaced immediately to avoid permanent damage of vital organ systems.

Hypofibrinogenemia may develop if the hemorrhage is severe and is a result of intravascular coagulation or because of activation of a fibrinolytic system. The fibrinogen level should be checked if hemorrhage cannot be controlled by the usual measures. If the level is found to be 100 mg per cent or less, then 4 gm of fibrinogen should be infused.

Large doses of intravenous oxytocics, combined with vigorous massage and parametrial compression, will usually control the bleeding. If it continues despite these measures and the clotting status is normal or corrected to normal, then an immediate laparotomy with bilateral hypogastric ligation and/or hysterectomy should be carried out.

AMNIOTIC FLUID INFUSION

Case Summary: E.M. 047793, age 43, Caucasian, Gravida 8, Para 7, type AB Rh positive, was admitted to another hospital for elective induction of labor at 43 weeks of pregnancy. Soon after the membranes were artificially ruptured and oxytocin was begun, the patient became dyspneic and cyanotic. The blood pressure could not be obtained and she soon became comatose. After two hours, during which blood pressure was maintained with vasopressors, she deliv-

ered an 11-pound stillborn infant. Immediately after the delivery of the placenta, she had a massive hemorrhage of blood which did not clot. The patient was still comatose and had developed a hemiparesis. After receiving multiple transfusions, vasopressors, fluids and 6 gm of fibrinogen, she was transferred to the University of Michigan Medical Center where shortly after arrival she died. An autopsy was performed, and the primary pathological diagnosis was amniotic fluid infusion.

Management of Amniotic Infusion Syndrome:

Fortunately, this syndrome is rare. About 25 per cent of patients who develop it expire before any treatment can be instituted, and in those who survive the diagnosis cannot be proven. The clinical picture is thought to be due to a combination of sudden mechanical blockade of the pulmonary vascular tree and an anaphylactoid reaction to particulate material in amniotic fluid.⁶

The typical case occurs in an elderly multipara who delivers a large baby after a rapid labor. She suddenly, and without apparent reason, develops acute respiratory distress and a shock-like state. The differential diagnosis includes other forms of embolism, ruptured uterus with hemorrhagic shock, aspiration of vomitus, eclampsia, idiosyncrasy to anesthetic drug, cerebral vascular accident, acute pulmonary edema and spontaneous pneumothorax. If the amniotic infusion syndrome is suspected, a multiple treatment program should be instituted immediately. Oxygen with 1 per cent isuprel is administered with positive pressure which will help counteract anoxia as well as bronchospasm and pulmonary arteriolar spasm. Atropine Sulfate 0.4 mg intravenously will inhibit the reflex vagal tone, and ephedrine sulfate 25 mg intravenously will help maintain systemic blood pressure without constricting the pulmonary vasculature. Solu-Cortef 1.0 gm given intravenously will inhibit the anaphylactoid reaction. Rotating tourniquets should be used to help diminish right heart strain. Also, an intravenous digitalis preparation is started.

A large proportion of those who survive amniotic fluid infusion for more than one hour will develop hypofibrinogenemia and will hemorrhage from the placental site. Therefore, the fi-

brinogen concentration should be determined at 20-minute intervals, and fibrinogen administered if the level falls to 100 mg per cent or lower.

Lost blood must be replaced with fresh whole blood, taking care not to overload the cardiopulmonary circulation. A careful record of all treatment should be kept on a separate page of the patient's chart, especially in the first hour or two after the initial insult.

SUMMARY

The problem of managing acute hemorrhage in the obstetric patient presents a challenge to every physician. This paper stresses the need to suspect the presence of a coagulation defect in these patients. Means for clinically evaluating the clotting mechanism have been outlined. Management has been suggested for hypofibrinogenemia with abruptio placentae, postpartum hemorrhage, intrauterine fetal death and the amniotic infusion syndrome.

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THE CASE AGAINST ANTI-SMOKING CAMPAIGNS IN THE PUBLIC SCHOOLS

By

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Smoking habits of students through high school have been determined in many areas by means of questionnaires, and the results in Selah, Washington, are very similar to those found in Portland, (Oregon)³, Newton, (Massachusetts)^{7,8}, Winnipeg, (Canada)⁶, Maine^{1,5}, etc. Cigarette smoking has been judged as the largest single cause of preventable disease in the United States today and it seems logical to try to educate students to keep them from starting the habit, and if they have already started, then to educate them to stop.

Following is a partial list of the types of educational programs which have been tried in various parts of the world: 1. In Utah, juvenile smokers go to court under a 1907 law which makes it illegal for a person under 21 to have, use, or accept tobacco. It is also illegal to sell or give tobacco to persons under 21. 2. Denmark's poster campaigns warn of the perils of teen-age smoking and stress the economic factors of how much sooner they can own motor scooters if they do not smoke. 3. An extensive anti-smoking program is being prepared by Canadians. 4. In an anti-smoking campaign in Edinburgh, Scotland², the only change noted was that more people thought that it was undesirable for young people to start smoking. 5. In Maine ^{1,5}, an education program among high school students conducted by the Health Department, using material from the American Cancer Society, showed only a slight change of attitude toward smoking, but no discernible change in smoking habits of students. In fact, the numbers of students smoking increased, as did the amount they smoked. 6. In Mamaroneck, New York⁹, a student non-smoking committee has been formed to educate the other students regarding the hazards of smoking. Members of this committee have reported: that "—by the time the students are in high school, it is too late to change habits because many are already

hooked. Even in junior high we often find it is too late. We've found our campaign is most effective in the elementary school where pupils are more open-minded and impressionable."

Education programs of many types have been tried throughout the world but few have been evaluated to see if they have had any effect. Such an evaluation of an education program was done in Selah Public Schools.

MATERIAL AND METHOD

A survey of the smoking habits of students in Selah schools, grades six through twelve, was done in 1961, 1962 and in 1964. In the beginning, a film strip describing the relationship between cigarettes and lung cancer was shown to all students. Literature from the American Cancer Society and other sources was made available to junior high and high school students. An essay contest on "Smoking and your Health" was held in both schools with two separate sets of three cash awards offered to the three winning essays. Shortly after the winners were announced, the 1961 survey was conducted. The results of this survey were compiled from the information on 801 completed forms. I also tried to ascertain their attitude toward smoking, using a questionnaire prepared and supplied by the American Cancer Society. See Table I Male and Female.

In the Portland schools, it was found that students who belonged to the Honor Society and those who engaged in organized school activities had a lower incidence of smoking. Because of this, a second survey was conducted in Selah among the Honor society, Lettermen and Vikings (a service club) to see how many students in these clubs smoke. The Honor Society had the lowest incidence.

In 1961, the 11th grade boys had the highest incidence of smoking in the school, 41%, and when the school activities chart is checked only two are members of the Honor Society, five

had won their letters in sports and only one is a member of Viking Club. The results of all of the Iowa Basic tests given to each class in high school show that the 1961 11th grade class, as a group, had much lower average scores than the other three classes, yet their average I.Q. is almost the same.

In 1962 the information obtained from the 1961 survey was shown to the students stressing the facts that the smoking students do not compete successfully academically or in athletics, nor do they participate in service clubs and other school activities. I felt that the "scare technique" of "If you smoke for 35 to 40 years, one in ten of you will have lung cancer" was too remote to the teenage students to affect them appreciably. I wanted to offer a possible reward that could be obtained within a period of a few months to a maximum of three years to see if the possibility of academic, athletic and social success in high school might influence students to refrain from smoking, and encourage those who were smoking to stop. In the 1962 survey the same questionnaire was filled out resulting in 775 completed forms. The clubs were listed at the bottom of the original questionnaire with the request that the students check the clubs to which they belonged. More than twice the number of students indicated that they belonged in Honor Society or were Lettermen than were actually registered in these clubs. Furthermore, most of them indicated that they were smokers, so a second questionnaire was necessary in order to obtain reasonably accurate information, and this form was distributed only to actual members of the clubs.

Because the Winnipeg survey covered grades 5 through 12, the 5th grade was also surveyed in 1962. One 5th grade teacher felt that the survey was a waste of his time so all of his class filled in every space on the questionnaire. The teacher was a non-smoker. This points out how a few students can change results but an uncooperative teacher can invalidate the results in any grade. It also points out the difficulties of re-surveying a school since both teachers and students can vary the results quite markedly when they know what information is wanted.

The Selah high school teachers observed that most of the students who smoked were taking vocational rather than academic subjects as was noted in the Portland survey. The Winnipeg and Selah surveys show similar areas where the incidence of smoking increases in the junior high 7th and 8th grades with some decrease in the 9th and 10th grades. It was obvious, after






the 1962 survey, that the early smoker is also the early drop-out. This is seen clearly in the comparison between the girls who were in the 8th grade in 1961, who became 9th graders in 1962. All the regular smokers were no longer present. They had dropped out of school. A similar drop-out pattern is found among male smokers when they reach the age of 16. Few realize that the incidence of smoking is greater among 8th grade students than it is in the first year of high school.

It is interesting to observe the change in attitude among the students. In the sixth grade, opinion is strongly against smoking but by the time they finish the eighth grade smoking is an accepted habit. Table II shows the attitude scores for each grade, both boys and girls, with 5 as a figure to represent strong opinion against smoking and 0 to represent strong opinion for it. The attitude changes in favor of smoking from 3.7 in the 1961 6th grade girls to 3.3 in the 7th grade, to 2.9 in the 8th grade girls, then up to 3.1 in the 9th grade. When the 6th grade girls of 1961 were compared with the 7th grade girls of 1962, bearing in mind that this is the same group of girls, their attitude has changed from 3.7 to 3.3 indicating more approval of smoking—this is the same as between the 6th and 7th grade girls in 1961. This seems to be very similar for both boys and girls in all grades surveyed, however the higher the incidence of smoking the lower the average attitude score.

There is a consistently greater number of boys than girls smoking and the amount they smoke is also consistently greater. In both groups the number who have never tried smoking decreases rapidly, with the lowest being among the 8th grade boys 1962 where only 16% have not tried. There were, however, several notes on the questionnaires, voluntarily written by those who had tried smoking, indicating that they had done so in the 4th grade. In discussion with the principals of the schools, their main difficulties with smoking, i.e. hiding of cigarettes, smoking on the school grounds etc. starts in the 4th grade and there is good indication that some children start to smoke, with parental approval, even before this time.

In February, 1964, the same questionnaires were used, about six weeks after the Surgeon General's Committee Report on Smoking was released. This survey, resulting in 959 completed forms, was conducted without any previous warning or additional education attempt on my part. In the 6th, 7th, and 8th grades, that group of students who had the least exposure to our

TABLE I
MALE

- A. Smoke $\frac{1}{2}$ pack or more daily 
- B. Smoke regularly but less than $\frac{1}{2}$ pack daily 
- C. Smoke at least once a week 
- D. Have tried smoking, but not as much as one day a week 
- E. Never smoked at all 

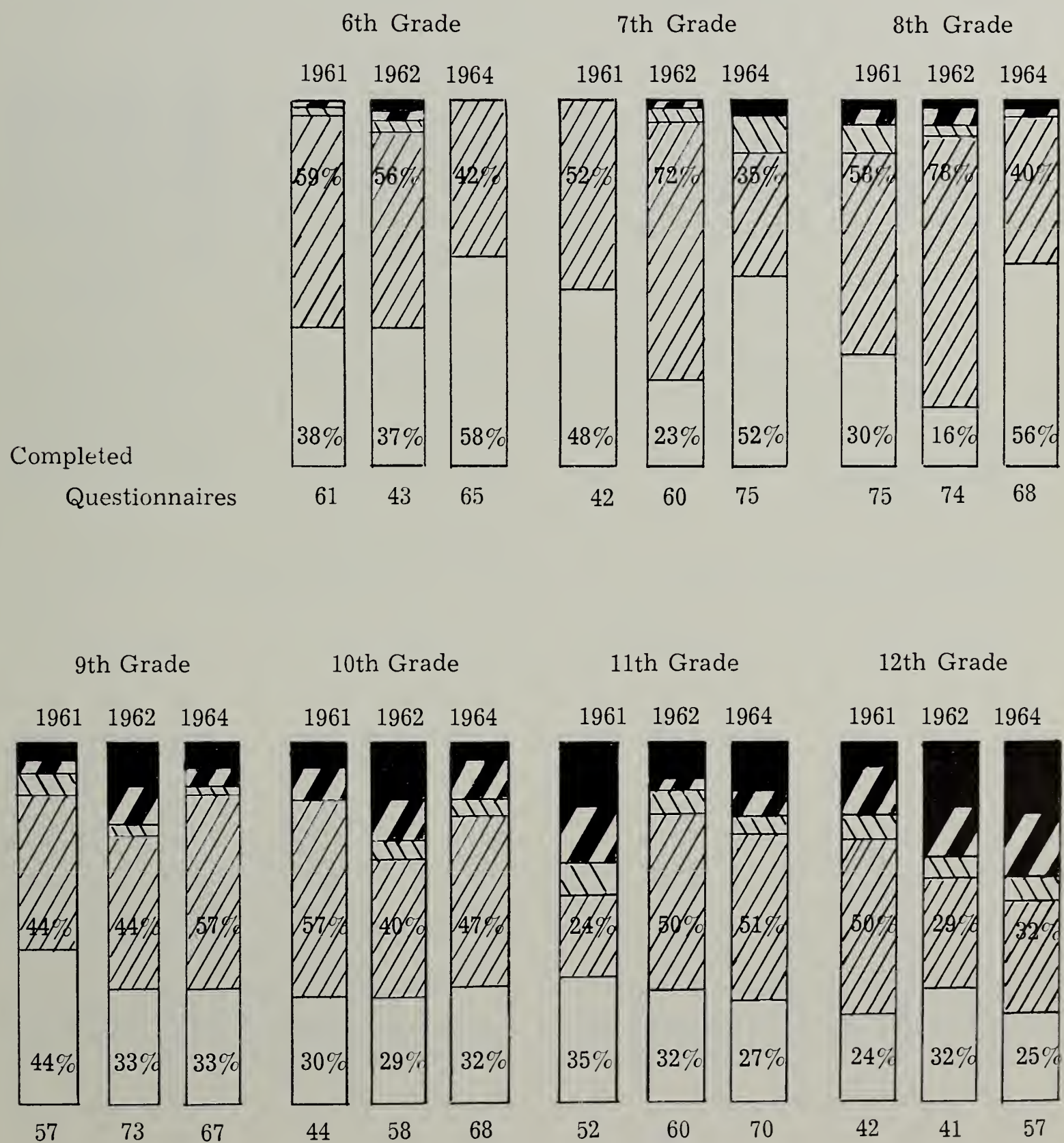


TABLE I

FEMALE

- A. Smoke 1/2 pack or more daily

B. Smoke regularly but less than 1/2 pack daily

C. Smoke at least once a week

D. Have tried smoking, but not as much as one day a week

E. Never smoked at all
-

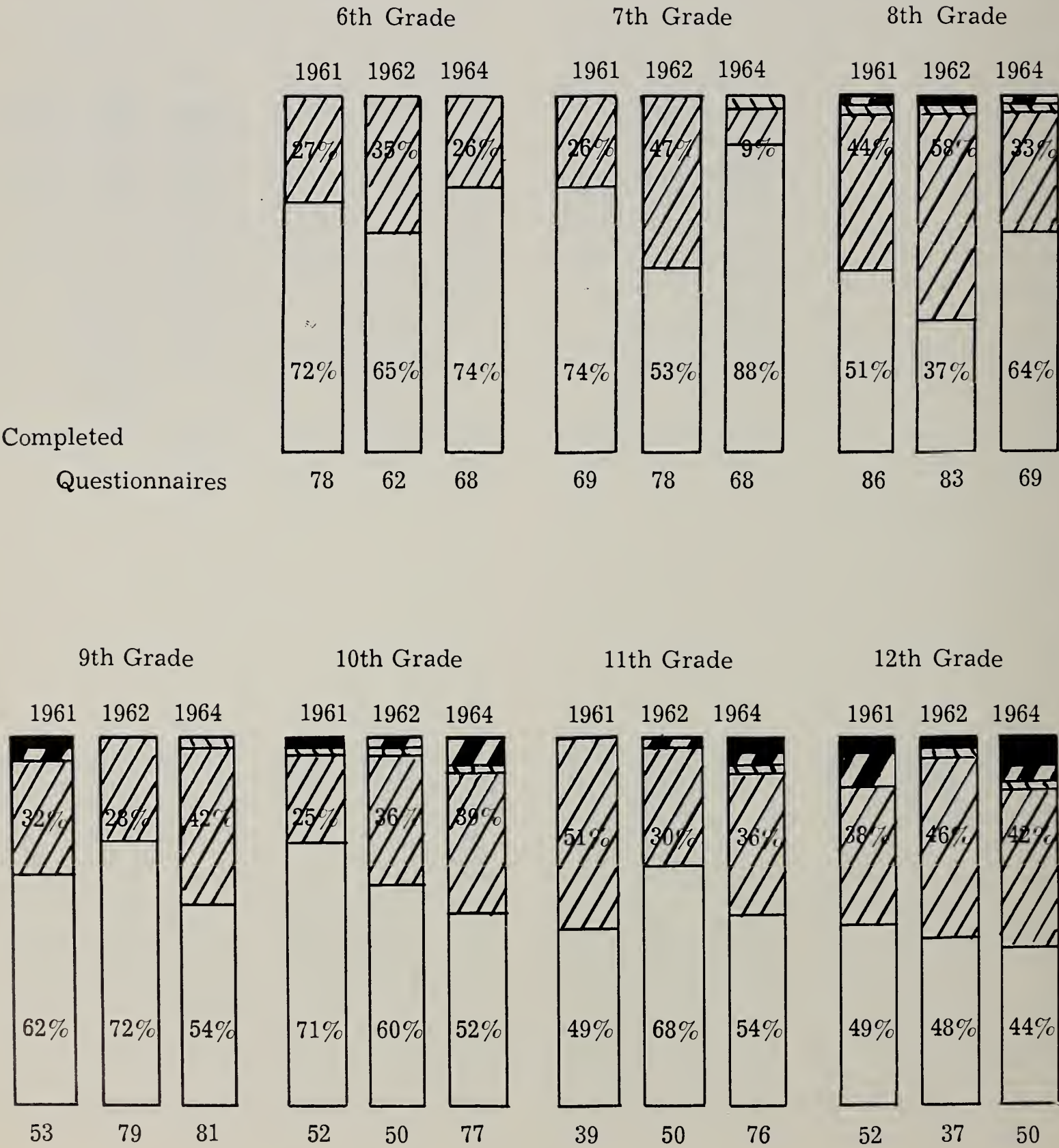


TABLE II
AVERAGE SMOKING ATTITUDE

0. strongly in favor of smoking (unfavorable attitude)
5. strongly opposed to smoking (favorable attitude)

MALE

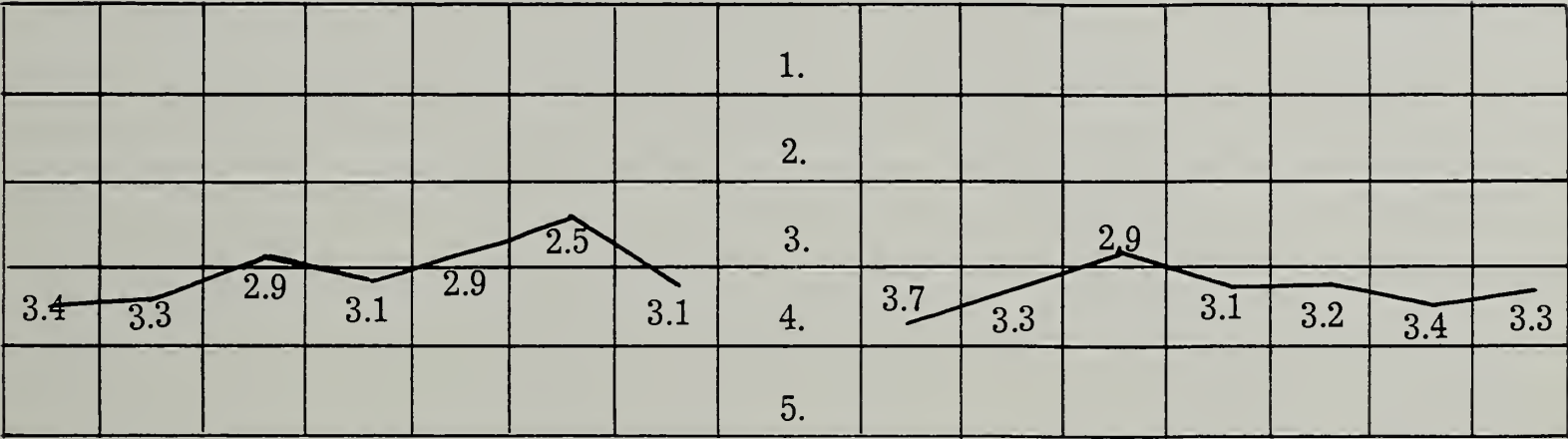
FEMALE

Grades

1961

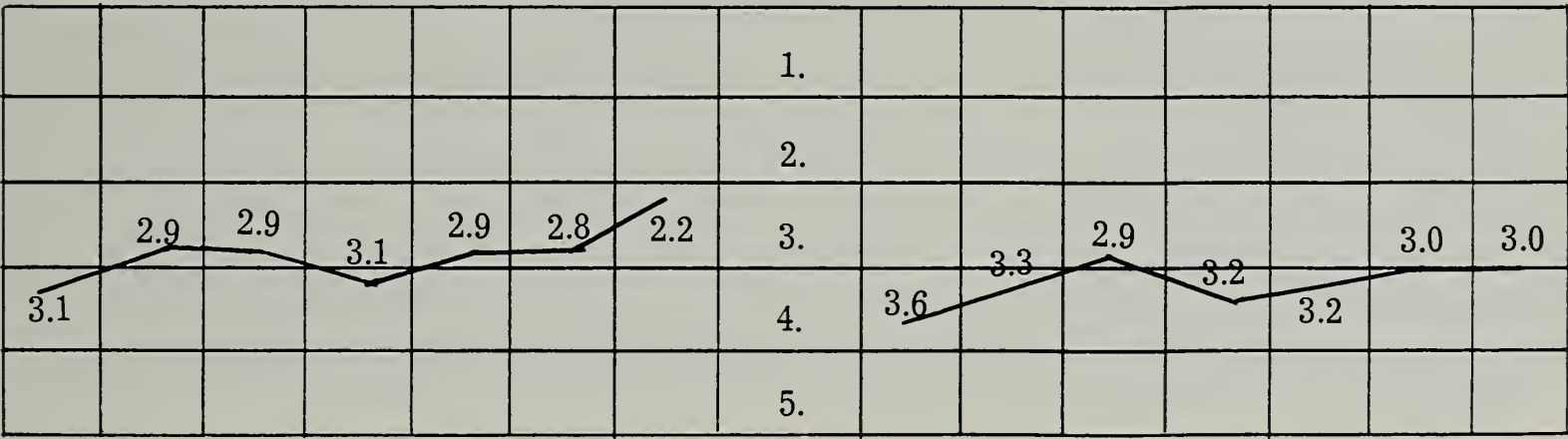
Grades

6th. 7th. 8th. 9th. 10th. 11th. 12th. 0. 6th. 7th. 8th. 9th. 10th. 11th. 12th.



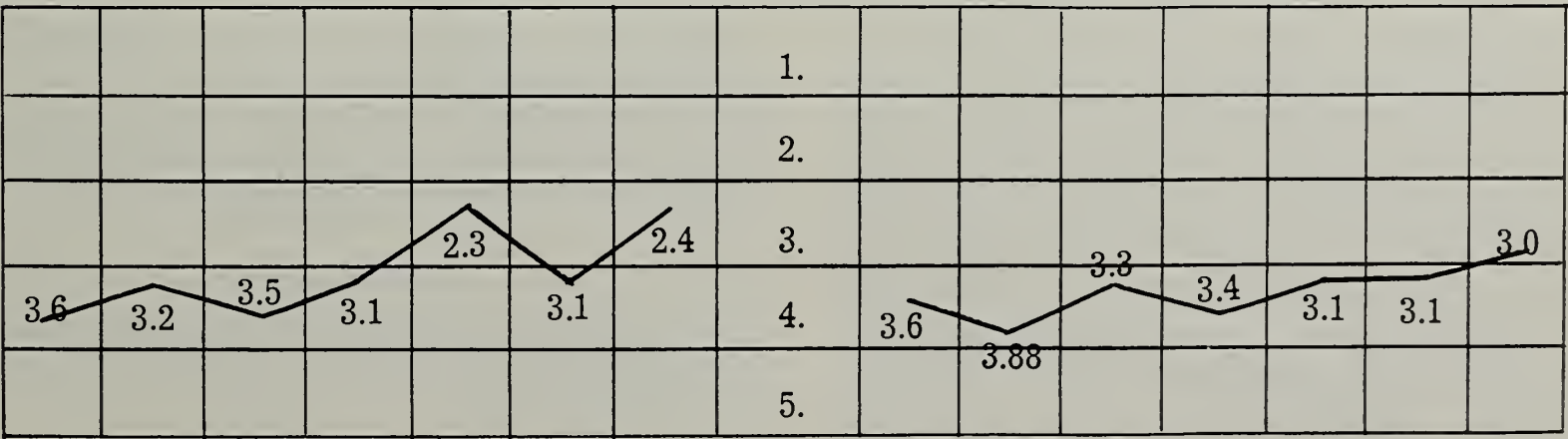
1962

0.



1964

0.



previous educational programs, the incidence of smoking among boys and girls was markedly less than it was in the 1961 and 1962 surveys. In contrast, those students who were in 6th, 7th and 8th grades in 1961 showed a marked increase in the numbers who were smoking or who tried smoking in 1962. Of the 7th grade boys in 1961, 48% had not yet tried smoking. When these same boys were 8th graders in 1962 only 16% had not tried to smoke. In 1964, when these boys were in the 10th grade there are 29% who have not tried smoking. Why this discrepancy? I contacted the school authorities and found that there were 152 8th grade graduates in 1962, and of these, 27 are not now in the Selah High School, but there are 36 students in the Sophomore class who were not attending Selah schools at the time of the 8th grade graduation. In Selah, the majority of drop-outs occur by the end of the Sophomore year, and, assuming that this is true, the majority of those students who transferred in are probably not smokers.

There are two entirely different reasons why young people start and continue to smoke⁴. A Harvard study^{7,8} indicates that the flaw in anti-smoking campaigns directed exclusively at teenagers is that they start smoking because of the influence of their parents and peers, particularly the older siblings in the family. Their survey considered a smoker to be anyone who had smoked 10 cigarettes. It does not require many cigarettes to make one addicted to nicotine, the socially accepted tranquilizer. The Harvard Survey showed that in all grades, the mean intelligence levels of children who did not smoke were higher than those of students who did smoke. Among smokers, mean I.Q.'s were lower for the heavy smokers than for the light smokers. Mean achievement in the academic years preceding the survey was substantially higher for non-smokers and for light smokers than for heavy smokers. These differences were particularly striking among boys. Higher academic achievement for non-smokers was evident within all social classes but the incidence of smoking was higher in the lower social classes.

In a Special Education class, designed for very slow learners and those students who had been in school for a minimum of seven or eight years, this survey showed that over half of them were regular smokers, the highest incidence of smoking in all the classes in all three surveys. Because this class is an ungraded group, the statistics for it were not included in Tables I and II. The highest incidence of smoking in all regular classes was found in the boys of the 12th grade,

1964, where 43% were regular smokers. This group had the highest incidence of smoking in all surveys reported including Portland, Winnipeg, etc. It would seem that forbidden fruits become sweeter when their existence is pointed out to the teenagers.

This anti-smoking campaign as a public education idea, is comparable to the use of the mobile x-ray units which, in theory, were supposed to find all cases of active tuberculosis so they could be isolated for treatment and thus eliminate the disease. The catch was that only those people who could be educated ever appeared for chest x-rays. Those with the highest incidence of tuberculosis avoided the units and thus were not discovered, so tuberculosis remains the same problem today as it was ten years ago. In trying to educate teen-agers regarding the hazards of smoking, I found that the program did no good and possibly some harm in the high school group, and that it definitely **increased** the number of smokers in the junior high school level.

What, then, is the answer? First, this emotional approach, the 'scare technique,' should be abandoned. Second, the hazards of smoking should be included in the regular health education courses and should be presented to 4th grade students, then repeated in similar classes in 5th and 6th grades.

CONCLUSION

An evaluation of all educational programs is necessary to determine if they are achieving their purpose. I had hoped that, when presented with facts and given the opportunity to read the literature placed at their disposal, those students who were smoking would stop, and that their attitude toward smoking would change to one of strong opposition. Neither of these things happened. Still upon reflection, why should the younger generation who, as yet, have minimal functional loss from cigarette smoking, be expected to change their habits suddenly when they are surrounded by their elders who continue to smoke even though they may have life threatening diseases which are worsened by cigarette smoking.

This means that an educational anti-smoking campaign defeats its purpose and actually increases the numbers who smoke.

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(Continued on Page 61)



Photo professionally posed

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CLINICOPATHOLOGICAL CONFERENCE - SIOUX VALLEY HOSPITAL

From the Intern and Resident Teaching Conferences of the Sioux Valley Hospital, Sioux Falls

JAMES A. RUD, M.D.*

Pathologist - Editor



MICHAEL R. FERRELL, M.D.**

Internist - Discussor

This 68-year old Caucasian female was transferred to Sioux Valley Hospital for intermittent chills and fever of three and one-half weeks duration.

The patient had not been well following a bilateral inguinal herniorrhaphy one month previous. She had abdominal pain, burning and nausea since the operation and her temperature had ranged from 101° to 103°F orally. She was hospitalized elsewhere and received chloramphenicol, 1 gram every 8 hours and penicillin, 1.2 million units daily. Subsequent to this she developed diarrhea. Seven to ten days prior to admission she developed lumbosacral tenderness on percussion. Laboratory work revealed a leukocyte count of 8000/mm³, hemoglobin of 11.5 gm%, and erythrocyte sedimentation rate of 11 mm/hr.

Systemic review: Except for frequent headaches since childhood and dyspnea of several months duration the systems review, past history, and family history were non-contributory. She had been deaf for thirty years.

Physical examination: The patient was an acutely ill, dehydrated, and toxic elderly woman who was listless and had poor memory for recent events. She had bilateral deafness and quite severe lumbosacral pain produced by moderate percussion. The remainder of the physical examination was unremarkable.

Laboratory and x-rays: The admission hemogram showed a hemoglobin of 13.5 gm%, RBC 4.57 million/mm³, hematocrit 40 vol%, MCH 29, MCV 88, MCHC 34, WBC 7800/mm³. The differential count showed 76% segmented neutrophils, 1% bands, 1% eosinophils, 20% lymphocytes and 2% monocytes. The VDRL was negative. The sed rate was 11 mm/hr, serum bilirubin 0.8 mg%, FBS 109 mg% and 139 mg%. Blood urea nitrogen was 15 mg%. Urinalysis showed a specific gravity of 1.015, pH 5.5, protein - negative, sugar-negative, hemoglobin-negative, and 0-1 WBC/hpf. Four days later the specific grav-

ity was 1.016, pH 6.0, protein 1+, sugar 2+, ketones - negative, hemoglobin - negative, and 2-4 WBCs/hpf with a few bacteria. Blood cultures were reported as negative after three days incubation. Agglutination tests for paratyphoid A and B, typhoid O and H, proteus OX19, and tularemia showed no titer. The brucella agglutination showed a titer of 1:40. Urine culture showed no growth after 48 hours. Electrolytes showed CO₂ content 29 meq/L, Na 117 meq/L, K 2.6 meq/L, and chloride 73 meq/L. The spinal fluid 8 days after admission yielded 1.9 ml. of slightly turbid and xanthochromic fluid. The cell count was 9 red blood cells/mm³ and 50 white blood cells/mm³ with a differential of 15% polynuclears and 85% mononuclears. The CSF protein was 235 mg%, (normal 15-45 mg%) and the LDH was 160 units (normal 0-40 units). On the same date ventricular fluid showed a total cell count of 690/mm³ with 380/mm³ red blood cells and 310 white blood cells/mm³ with a differential of 16% polynuclears and 84% mononuclears. The ventricular fluid protein was 60 mg% (normal 0-15 mg%). Routine culture on ventricular fluid showed no growth after 48 hours.

A chest x-ray showed a probable tuberculoma in the right lung base. Antero-posterior and lumbo-sacral films showed mild degenerative changes in the lower lumbar region. The gallbladder was not visualized and the upper GI series was normal except for a small diaphragmatic hernia. A barium enema was normal and subsequent visualization of the gallbladder was normal.

Hospital course: A surgical consultant reported the hernia repair was satisfactory. A second surgical consultant thought the chest lesion was probably granulomatous but if of recent origin the possibility of neoplastic disease could not be ruled out. He believed the fever was not due to pulmonary pathology but was probably related to postoperative urinary tract infection.

She continued a progressive downhill febrile course and became comatose on the sixth hospital day. A psychiatrist found her stuporous with Cheyne-Stokes respirations. His impression was that of intracranial pathology rather

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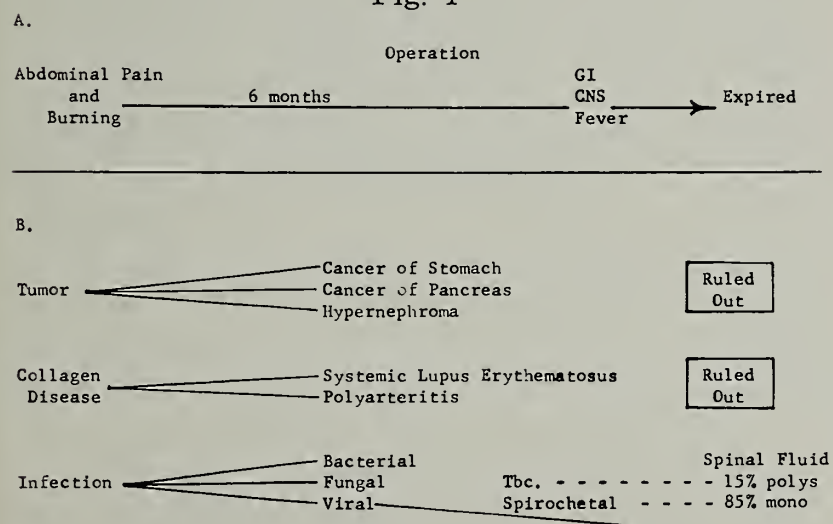
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than psychiatric disease and had a neurologist see her. The patient's blood pressure had increased to 210/100 prior to his examination but when he saw her it was in the range of 150-180 systolic. The pulse ranged from 100-120 and was rapid and somewhat thready. She continued to have Cheyne-Stokes respirations and the pupils were dilated and fixed. There was no verbal response. She responded to painful stimuli. There were no focal or localizing signs. There was no deviation of the eyes, no papilledema, and no retinal hemorrhages. The left lower extremity was initially rigid and a few moments later became flaccid. The deep tendon reflexes were 1+ bilaterally and the Babinski reflexes were equivocal. There was an attempt at withdrawal of the lower extremities to painful stimulation which also evoked an extensor response in the upper extremities. The neurological impression was that the patient probably had some type of cerebral neoplasm, brain abscess, or cerebral vascular disease. A cerebral decompression procedure was carried out. She expired on the tenth hospital day without regaining consciousness.

CLINICAL DISCUSSION

Dr. M. R. Ferrell: The following diagram (Fig. 1) is a graphic illustration of the sequence of events and my thinking in arriving at a diagnosis in this case.

Fig. 1



We have a patient in whom complaints of abdominal pain and burning have been present for about 6 months. She had a bilateral inguinal herniorrhaphy and almost immediately she developed further gastrointestinal and central nervous system complaints. She then expired. This lady was living in symbiosis with some disease process during this entire period. The operation upset this symbiosis and the relationship became less favorable to her resulting in her death. I think something chronic is going on

in this patient that was precipitated to an acute episode by the operative procedure.

I think of tumor, infection and collagen disease in general terms as diagrammed. When you read through the protocol, it could be any one of these. What I was looking for (and I think I found them) were some sign posts to direct me to the diagnosis.

In the tumor group I considered three possibilities: carcinoma of the stomach, carcinoma of the pancreas, and hypernephroma. Although from the clinical picture any of these could be present, I ruled them out on the basis of findings such as negative gastro-intestinal x-rays on two occasions, an indication of some normal liver function, an indication of normal kidney function with a normal BUN, no hematuria and no mass in the abdomen.

Collagen diseases, such as lupus erythematosus and polyarteritis, could produce this clinical picture very easily. Again, with lupus you would certainly expect some renal changes such as BUN elevation and proteinuria. In polyarteritis I would expect to find some other physical signs along with definite renal changes. In polyarteritis, there is renal involvement in a large percentage of cases; the parameters that we have here do not show kidney damage. Since she is obviously severely dehydrated, the urine specific gravities of 1.016 and 1.015 may be a reflection of the fact that she could not concentrate her urine which is a very good indication of severe renal disease. However, she may have been getting very good intravenous fluid therapy and was just pushing fluids right on through. She obviously was losing a lot of fluids in the gastro-intestinal tract because the serum sodium, potassium, and chloride were decreased. There was no indication from the protocol that she was losing them elsewhere.

When I consider infections, I include diseases caused by bacterial, fungal, and viral organisms. Among the diseases caused by bacteria, I ruled out everything with the possible exception of tuberculosis and spirochetel disease on the basis of the differential white blood count in the cerebrospinal fluid which was 15% polymorphonuclear cells and 85% mononuclear cells (Fig. 1) The predominance of mononuclear cells in the cerebrospinal fluid is suggestive of tuberculosis, spirochetel disease, viral disease, and possibly some fungal disease but not of acute bacterial disease. The cerebrospinal fluid protein may be elevated by any one of these diseases as can the LDH (Lactic dehydrogenase). The differential in the protein between the ven-

tricular and lumbar cerebrospinal fluid is merely the concentration differential between the fluid from the two sites. Normally the protein concentration of ventricular fluid is about 15 mgm% and lumbar is about 45 mgm%.

As far as fungal disease is concerned, the spinal fluid in cryptococcosis is usually of gelatinous consistency. With blastomycosis there is almost always a skin lesion. Histoplasmosis and coccidiomycosis cannot ordinarily be differentiated from tuberculosis in the spinal fluid because they are usually very similar.

Viral disease, of course, is a possibility. However, I don't consider it likely with this clinical course.

Next to meningococcus, tuberculosis is one of the more common meningitides in adults. Perhaps we should look at the chest x-ray next.

Dr. Bryson R. McHardy*: The lesion mentioned in the protocol is in the right lower lung field just above the costophrenic angle (Fig. II). It has a nicely calcified center which would make it more probable that this is a granuloma. With the calcification you cannot exclude a hamartoma but the likelihood of neoplasm would be very small. The chest is otherwise normal.

Dr. Ferrell: You notice there was tenderness on palpation and percussion of the back. Is there x-ray evidence of what may be causing that?

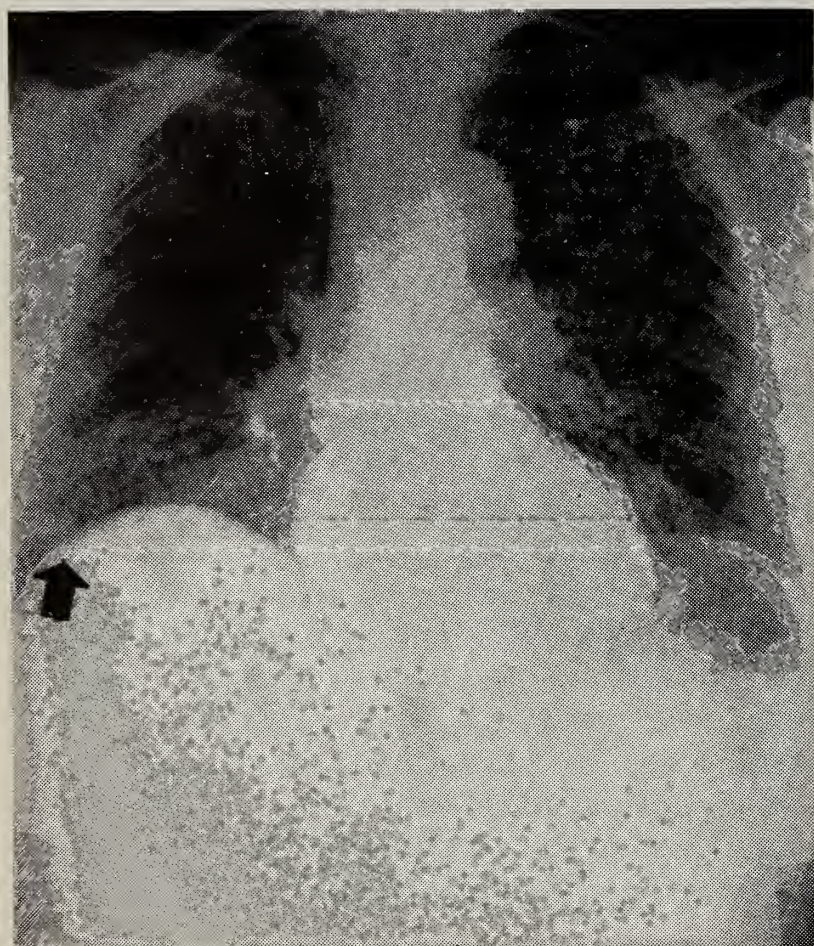


Fig. II - Note lesion at right costophrenic angle.

Dr. McHardy: She had mild scoliosis and spondylolisthesis of L4 and 5 which might account for the back pain. The calcification within the wall of the abdominal aorta is about usual for a 68-year old. She also had a hiatal hernia.

Dr. Ferrell: This is also a typical picture for brucellosis, especially with back pain. This is very characteristic along with the type of fever which she had, but again I would hope to see a higher titer.

Salmonellosis should also be considered since *Salmonella* bacteremia can cause brain abscess and meningitis. We do not have all of the titers here but do have Paratyphoid A and B and Typhoid O and H, all of which are negative. The most common organism that causes this picture is *Salmonella enteritidis*, a group D organism.

Another very exotic cause is *Listeria monocytogenes* which is apparently more common in females because it involves the genital organs. This can also produce a picture very similar to this lady.

You have to decide on a diagnosis in C.P.C. discussions. With the clinical picture and course together with the sign posts I discussed earlier, I decided that she had tuberculous meningitis.

Tuberculous meningitis can sneak up on you. It can involve the brain stem. The terminal picture of tuberculous meningitis looks like this with the Cheyne-Stokes respirations, the flaccidity and the lack of pupillary response. Many cases of tuberculous meningitis may show no other clinical manifestations of tuberculosis. This lady does since she probably has a tuberculoma. That hard core center with soft haziness surrounding it is significant to me. I wish there was a PPD skin test but none is recorded.

I have had the impression that there is an actual dissemination of the tubercle bacillus from the foci of infection at the time of trauma or stress. Apparently this is not true according to what I have been able to gather. There are tuberculomas that are actually pockets of tuberculosis in the meninges and brain that break down. She may have been festering along with this for many years. When she was stressed these then broke down and involved the meninges and the brain rather than spreading from the chest at this particular time.

Dr. Robert Nelson*: Assuming the mycobacterium is the human type and not resistant to drug therapy, how would you treat central nervous system tuberculosis? What drug or combination of drugs would be most effective?

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*Surgeon, Sioux Valley Hospital.

Dr. Ferrell: The three primary anti-tubercular drugs are para-aminosalicylic acid (PAS), isoniazid (INH), and streptomycin. These should be given in combination in high doses. In cases such as the one we have just discussed, steroid therapy is probably also indicated.

Dr. Nelson: Do all of these drugs cross into the spinal fluid?

Dr. Ferrell: No, not as well as you might think. Isoniazid has the greatest facility for crossing into the spinal fluid rapidly and does very well; followed by para-aminosalicylic acid and then streptomycin. The addition of steroids in severe cases can be life-saving.

In this case I would have begun treatment on the basis of the history, clinical findings and the x-ray lesion in the lungs without a positive PPD skin test. Of course, a positive test would have made me more confident in making such a diagnosis and in instituting therapy. I recall a recent case of miliary tuberculosis where in retrospect the diagnosis and treatment were delayed too long. I discussed this case with several men in Milwaukee. One of them asked me a very pertinent question with which they all agreed. He wondered about monocytosis in the peripheral blood smears. Monocytosis is apparently a very common accompaniment of miliary and central nervous system tuberculosis. In this lady's case, the peripheral blood was normal; however, there was an increased number of mononuclear cells of the cerebrospinal fluid.

Dr. Karl H. Wegner*: Monocytosis is typically associated with an active and progressive clinical tuberculosis. A decreasing monocytosis is associated with clinical improvement of the tuberculosis.

Dr. John F. Barlow:** This is the so-called Medlar ratio which has been used as a prognostic indication. Increasing monocytes with decreasing lymphocytes indicate a poor prognosis while vice-versa is a good prognostic sign.

Dr. Ferrell: I had the opportunity to treat several cases of tuberculous meningitis while stationed in the Army at Fitzsimmons General Hospital. We had cases almost as sick as this lady and used triple drug therapy along with steroids and they recovered satisfactorily. However, this is all retrospective thinking.

Dr. Bill G. Church*:** Was there much in the way of residual central nervous system damage in those patients?

Dr. Ferrell: No, amazingly not.

Dr. Barlow: I would like to comment on the Salmonella agglutination titers. I agree that the use of Typhoid O and H and somatic O of paratyphoid A and B titers is outmoded. This is because O antigens are much better to use than H antigens and the typhoid O, paratyphoid A and B do not cover all of the major O groups of Salmonella. Infections due to Salmonella of other O groups than typhoid, which is a group D, are actually much more common than disease due to Salmonella typhosa, the organism of typhoid fever. We now routinely do titers against the major Salmonella O groups — A, B, C, D, E.

Dr. Ferrell's diagnosis:

Miliary tuberculosis with tuberculous meningitis.

PATHOLOGICAL DISCUSSION

Dr. James A. Rud: Autopsy revealed a calcified 1.5 cm. nodule in the right lower lobe as well as multiple 0.2-0.3 cm. nodules throughout both lungs, the liver, and the spleen. Microscopically these were tubercles with a typical granulomatous appearance—the periphery con-

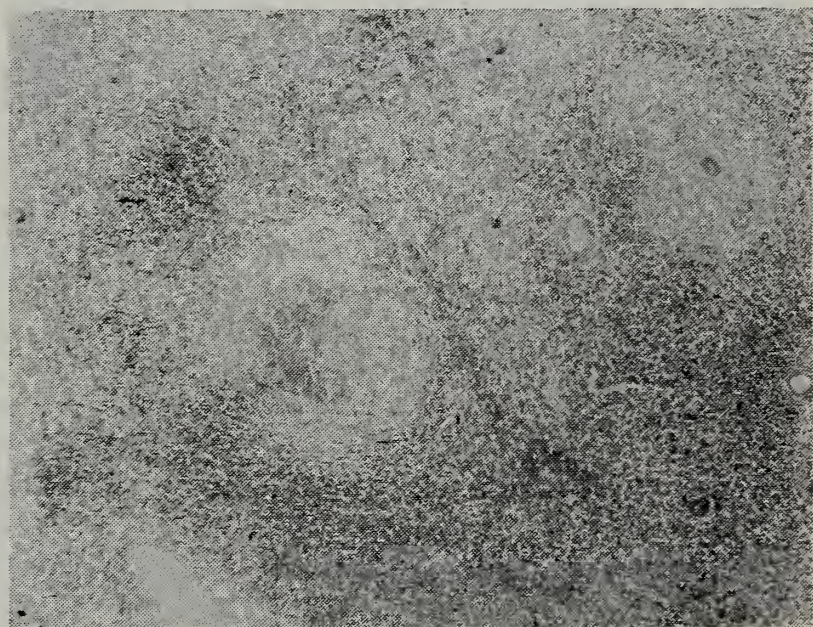


Fig. III - Granulomas in spleen

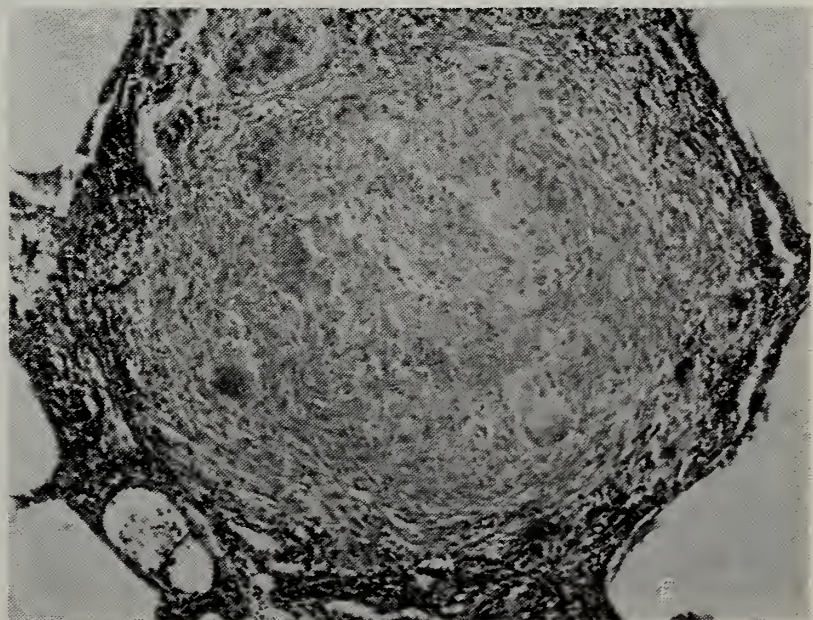


Fig. IV - High power of granuloma in lung

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taining numerous lymphocytes, fibroblasts, and plasma cells. There were scattered multinucleated giant cells. In larger tubercles central caseation necrosis was present (Fig. III, IV).

The meninges were diffusely opaque and appeared thickened. These changes were most prominent over the lateral and inferior surfaces of the brain. Extensive laminar hemorrhages involved the cortex and the underlying superficial white matter. The basal ganglia and brain stem showed extensive hemorrhagic necrosis. These changes were thought to be due to severe anoxic encephalopathy (Fig. V).

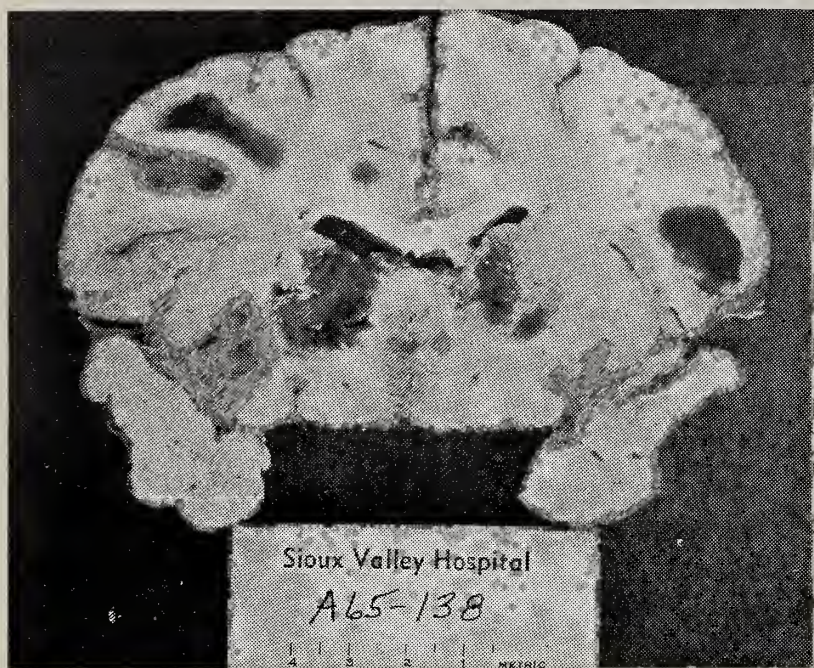


Fig. V - Brain with areas of hemorrhagic necrosis in cortex and basal ganglia

Microscopically the surface of the brain was covered by a cellular fibrinous exudate. Within the meninges were large numbers of lymphocytes, plasma cells and histiocytes (Fig. VI).

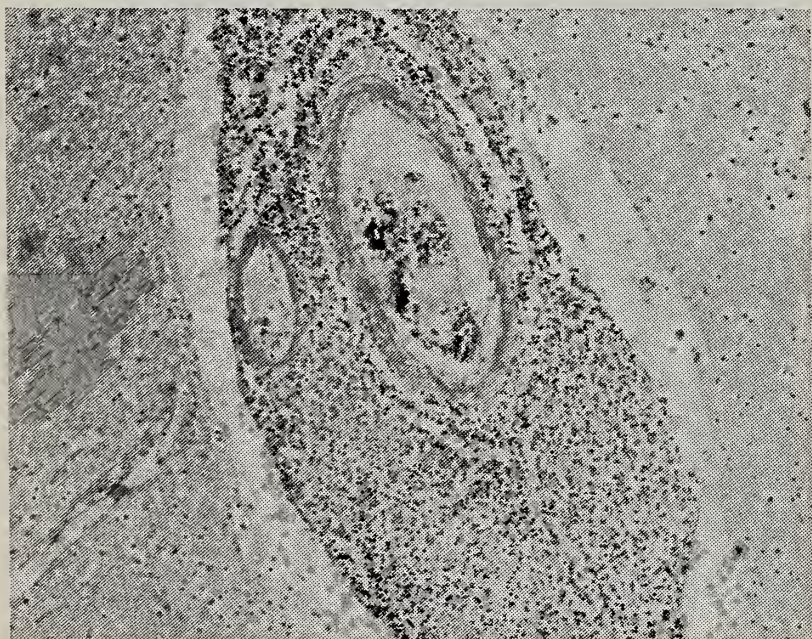


Fig. VI - Close-up of meningeal exudate

Ziehl-Nielsen stains revealed innumerable acid fast organisms of characteristic appearance scattered throughout the exudate covering the brain and similar organisms were in the tubercles of the lungs, liver and spleen.

We are dealing with a disease which occurs most commonly in children although no age is exempt. Those persons between the ages of six months to five years of age are especially vulnerable.

Tuberculous meningitis is usually due to the human type of *Mycobacterium tuberculosis*. The bovine type of organism may cause a significant number of cases in children in those parts of the world where raw milk products are consumed. Pasteurization of milk and milk products in this country has caused a marked decrease in incidence of the disease.

The pathogenesis of the disease has not been fully explained. Various theories have been proposed. Among these: (1) Direct hematogenous spread to the meninges would appear to be the obvious cause when it is a part of miliary tuberculosis. However, Rich and McCordock^(1,2) injected the organisms into the carotid arteries of animals and showed that they do not develop primary tuberculous meningitis but do develop generalized miliary tuberculous nodules throughout the body. They also found that direct injection into the subarachnoid space resulted in tuberculous meningitis. They thought that in the majority of cases, meningitis was secondary to a small focus in the cortex or meninges and found support for this theory in 90 per cent of their cases.

Hektoen³ proposed that the infection reached the meninges by passing through the walls of the small arteries or veins, the walls of which might be entirely replaced by tuberculous granulation tissue.

Hematogenous spread to the choroid plexus with secondary spread to the walls of the ventricles and subarachnoid space was suggested by Kment⁴. In his series, he found tuberculomas in the choroid plexus in 60 per cent of the cases. Beres and Metzler⁵ found lesions in this location in 39 per cent of their cases.

Greenfield⁶ divides tuberculosis of the meninges into two separate entities. The term meningeal tuberculosis has been applied to those cases in which tuberculomas may be found in the leptomeninges. They may give rise to generalized meningitis but this is not a constant

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finding. Generalized tuberculous meningitis is the term applied to cases arising from generalized miliary tuberculosis and would be most apropos in the present case. It is associated with miliary tuberculosis in 70-80 per cent of all cases and the primary focus is within the lung in about 70 per cent of all cases.

PATHOLOGICAL DIAGNOSIS

1. Pulmonary tuberculosis with miliary tuberculosis and tuberculous meningitis.
2. Anoxic encephalopathy, secondary to above.

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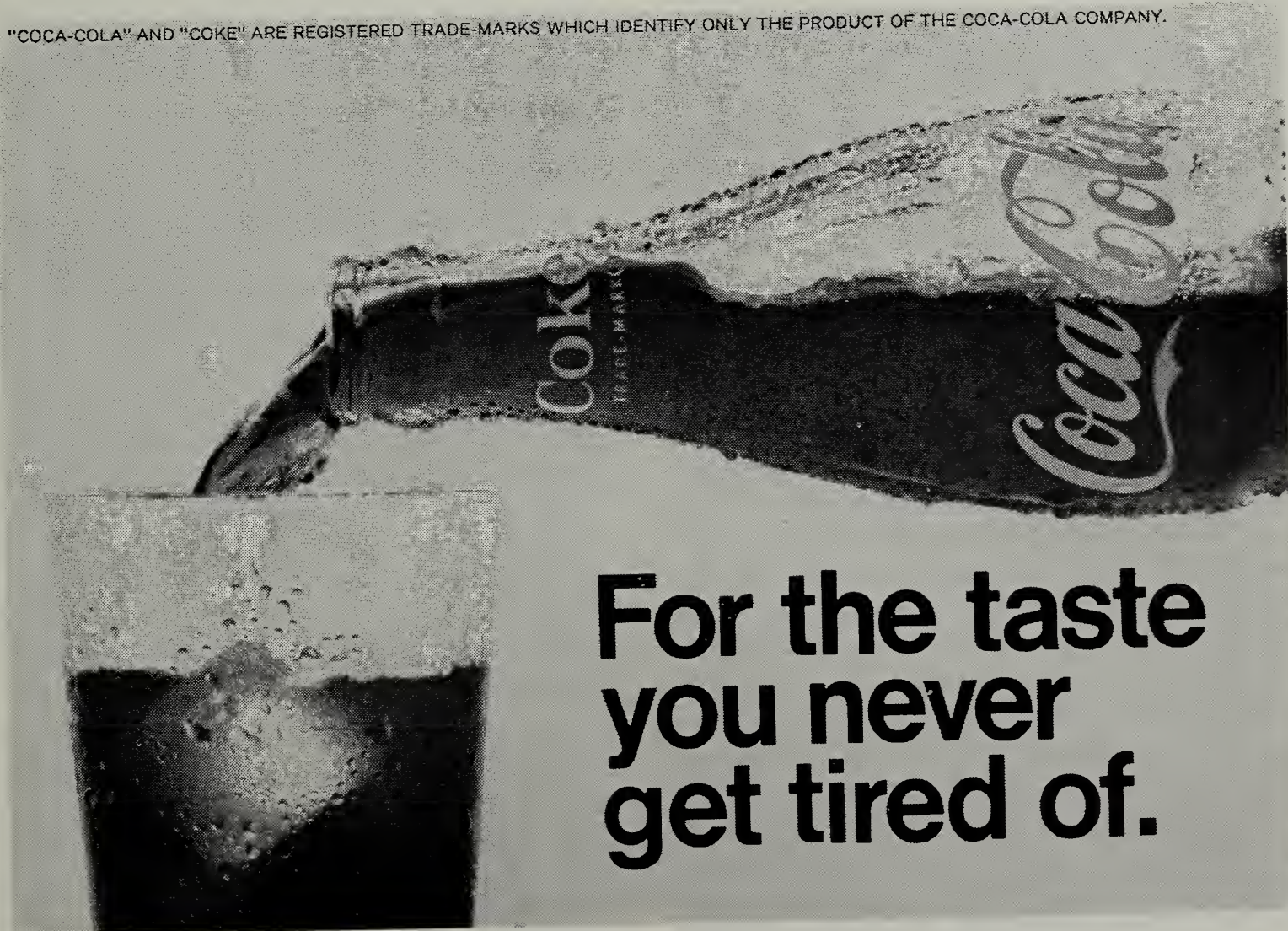
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Preventable and Avoidable Cancers and Cancers Arising From Personal Indifference

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The field of cancer prevention offers greater possibilities for the control of cancer and the saving of lives than any other measure we have at our command today. Surely it is better to prevent the occurrence of a cancer than it is to try to cure it once it has occurred.

It may be surprising to some of you that cancer can be looked upon as pre-eminently a social disease and as a public health problem. It is a social disease because, as we shall see, social conditions contribute heavily to its cause and social measures are required for its control. Economic circumstances also have a direct bearing on this disease. For example, a recent study¹ of the records of the California tumor registry indicates:

That cancer of the cervix is twice as frequent in the lowest income groups as in the highest;

That among men, lung and stomach cancer strike the lowest income group twice as frequently as it does those with the highest incomes;

That only 1/3 of the cancer patients in county hospitals received early diagnoses, while 1/2 of those in private hospitals received the benefits of early diagnosis;

That as a result of early diagnosis and better treatment, 62 per cent of private hospital patients with cancer of the cervix survived five years or more but only 39 per cent of the county hospital patients survived five years; and

That 2/3 of the women in the highest social class had at least one Pap test, but less than 1/3 of the women in the lowest income group had received this benefit.

The understanding of these factors together with the knowledge that is being accumulated from the geographical pathology of cancer are

the major developments in the control of cancer today. These are the factors I am going to discuss.

Until recently, the primary objective of cancer prevention has been limited to the early diagnosis of malignant disease, and preferably at the pre-cancerous stage. Actually, the therapy of pre-cancerous lesions forms the cornerstone of cancer prevention, and with current methods of treatment, results in a high rate of cure. The knowledge about extrinsic carcinogens in man's environment has been developing so rapidly that it is now possible to eliminate or to control many of the factors that not only affect particular occupational groups, but also the general population.

The potential scope of cancer prevention is limited by the number of human cancers in which extrinsic factors are responsible. These include all environmental carcinogens, or cancer forming agents whether already identified or not, as well as "modifying factors" of intrinsic origin such as hormonal imbalances, dietary deficiencies, and metabolic defects. The types of cancer that are influenced by extrinsic factors, directly or indirectly, include many tumors of the respiratory system; the gastrointestinal and urinary tracts; the skin and mouth; the hormone dependent organs such as the breast, thyroid and uterus, and the blood and lymphatic systems. Collectively these account for about three-fourths of all human cancers.² **Thus it would appear that the majority of human cancers are potentially preventable.**

What do we mean by cancer prevention? It is defined by the World Health Organization Expert Committee on the Prevention of Cancer as "the elimination of, or protection against, factors known or believed to be involved in carcinogenesis and the treatment of pre-cancerous conditions."

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Experimental evidence has established that there is a long latent period of carcinogenesis, as for example in carcinoma of the cervix, in which it has been found to be about eight years. During the latent period the events leading to the eventual development of the tumor may be stopped in a variety of ways:

1. By the prevention of the carcinogenic process from arising in the first place.
2. By prevention of the tumor from eventually developing.
3. By forestalling the development of the tumor by appropriate detection methods.

The signs and symptoms of pre-cancerous lesions are recognizable in many sites including the skin, mouth, pharynx, esophagus, stomach, colon, rectum, female reproductive organs and breasts. In some cases they are first recognized by the alert patient. We should encourage people to be aware of them, and to consult a doctor on what may appear to them to be trivial matters, such as senile keratoses, leukoplakia, polyps of the gastrointestinal tract, unusual bleeding or discharge from a body orifice, a lump or thickening in the breast or in tissues elsewhere, a persistent change in bowel or bladder habits of two weeks duration, persistent hoarseness or cough, persistent indigestion or difficulty in swallowing, and a change in a wart or mole. These symptoms may NOT mean cancer, but any one of them should ALWAYS mean a visit to a physician.

The study of the incidence of cancer in different countries and even in different areas of the same country offers one of the most promising ways of obtaining new clues to the etiology of this disease. Geographic cancer pathology has become of age but much still remains to be learned about the incidence of the various types of cancer in Africa, in Asia, and Central and South America and elsewhere. Cancer incidence is not static, however, and rapid changes in the social and economic organization are taking place in almost every country. It is, therefore, important that information be obtained now, while big differences in the incidences of various cancers still exist in the undeveloped countries. Once lost, this opportunity may never return. This is why the American Cancer Society and the National Cancer Institute are encouraging and supporting epidemiology studies in many countries throughout the world and always with the hope that new carcinogenic factors in these environments may be found.

Until relatively recently, cancer prevention, considered in terms of elimination or protection

against known carcinogens, has been restricted to a group of chemical substances known to give rise to cancer among limited occupational groups. We have now come to realize that these same compounds can gain entry into the general environment, the atmosphere, the water, and the soil, as potential carcinogenic pollutants and with increasing contamination may become of importance in the occurrence of cancer in the population at large.

The spectrum of such carcinogens is of necessity broad and encompasses every type of chemical agent, synthetic and natural, certain physical agents, viruses, and radiations of various types. In fact, man is in no position to ignore seemingly unimportant possibilities of other types simply because we don't know about them today.

The identification of those environmental factors that have a causal relationship in the development of cancer can provide us with a short cut in the control of many cancers. It is those cancers which are directly related to factors in our environment that I refer to as "Preventable and Avoidable Cancers and Cancers Arising from Personal Indifference."

The classical example and the first identification of an environmental chemical causative agent of cancer in man was cancer of the scrotum.³ It was a common occurrence among chimney sweeps, nearly 100 times more frequent than in the general male population. It was caused by their years of contact with soot. When this was realized, protective clothing and cleanliness were instituted and this avoidable cancer has practically disappeared. Sir Percival Pott made this acute observation in England in 1775.³

The most common of all cancers, cancer of the skin, is an avoidable cancer. It occurs almost exclusively on those parts of the body exposed to sunlight; is more common in regions of the earth receiving more ultraviolet radiation; is much more frequent in the light-skinned people than in dark-skinned, and appears most often in people engaged in outdoor occupations. It is induced by prolonged over-exposure to sunlight, to ultraviolet lamps, to arsenic, to certain oils and chemicals, all of which agents it is possible to avoid, and thus to prevent this form of cancer.

Because it occurs on the skin, it is easily seen, recognized early, promptly treated and cured. The cure rate for skin cancer is 93 per cent in the United States, but because of the high inci-

dence the seven per cent failures account for over 4,000 unnecessary deaths every year.⁴

Another cancer which is avoidable is a particular type that occurred in the bladder of upwards of 70 per cent of the chemical workers that were heavily exposed to aniline dye intermediates, and especially to betanaphthylamine.⁵ When this chemical was identified as the culprit and exposure to it was stopped, this particular cancer disappeared and the overall incidence of bladder cancer in this group of men returned to normal.

Recent studies by Wynder⁵ and associates report that cancer of the bladder is predominantly a male disease, that it is increasing in some countries, including the United States, and that cigarette smoking increases the risk of bladder cancer by about two-fold. They also point out that shoe repairers appear to have a higher incidence of bladder cancer and that they should be advised to handle dyes and polishes with more care, and to wash their hands frequently with soap and water as a means of reducing their higher risk to this disease.

The age-adjusted death rate for cancer of the bladder varies according to the country, from eight per 100,000 in South Africa to only two per 100,000 in Japan, and about four per 100,000 in the United States. In Egypt it increases to about 11 per 100,000, possibly due to the high incidence of schistosomiasis. It is reasonable to assume that the excess cases of bladder cases among male subjects are related to exogenous causes, and that preventive steps can contribute significantly to a reduction in bladder cancer frequency.

Among industrial workers it has long been known that about 50 per cent of the miners in the pitchblende mines in Joachimsthal,⁶ and about 75 per cent of the miners in Schneeberg,⁷ both in Czechoslovakia, dying from natural causes, died from cancer of the lung brought about by their prolonged exposure to radioactive ores. At about the same time it was also recognized that the estimated life-time incidence of lung cancer in chromate ore refining workers was approximately 35 per cent.⁸ We are now learning that the inhalation of asbestos fibers⁹ can also be a responsible agent in the causation of cancer of the lung, as well as of malignant mesotheliomas of the pleura and peritoneum and that even mild inhalation of asbestos fibers¹⁰ is capable of giving rise to these malignant tumors. Likewise, the inhalation of beryllium salts and oxides² by workmen handling these products has proven to have a high

carcinogenic potential in the production of lung cancer. It is a curious but well established fact that men refining nickel ores developed cancers of the ethmoid sinuses in a surprisingly high incidence.² Another substance, cobalt,¹ when accidentally injected or thrust beneath the skin almost invariably caused a cancer to develop at this site. Fortunately, exposure to all these carcinogenic substances can and are being eliminated by modern protective industrial practices and these cancers avoided.

The most important environmental causal agent in the production of internal cancer today is, of course, the prolonged inhalation of cigarette smoke. The evidence that inhalation of cigarette smoke is the major cause of lung cancer and a major health hazard is overwhelming from the statistical, the pathological, the experimental and the clinical evidence. Every medical and health organization in this country and abroad that has studied this subject has concluded that cigarette smoking is a serious health hazard. There have been no exceptions. Unfortunately, cancer of the lung is one of the most fatal of all cancers, with only five patients out of every 100 surviving five years.

It is tragic that the medical profession and the public have been so long in recognizing that cancer of the lung is largely an avoidable cancer. This cancer for the most part is due to the personal indifference of the individual who prefers not to accept the ever increasing evidence of the causal relationship between the inhalation of cigarette smoke and lung cancer. I choose to call this process "Cancer Arising from Personal Indifference."

An interesting report by Moore¹¹ appeared in the Journal of the American Medical Association for January 25, 1965, in which he divided a group of 102 smokers, all of whom had been "cured" of mouth or throat cancer, into two groups: 65 who continued smoking, and 37 who stopped. Within approximately six years about 1/3 of those who continued smoking acquired a second "tobacco area" cancer, while only two of the quitters developed second cancers in this same period. It was also significant that most persons in their locality who developed mouth and throat cancer smoked cigarettes, and those who continued to smoke and developed second cancers were nearly all cigarette smokers. In the past the impression has been that only cigar and pipe smokers, or tobacco chewers, acquired mouth cancers, but from this study it would appear that tobacco in any form can cause cancer of the mouth and throat.

I wonder if any of us as recently as five years ago would have predicted that cancer of the cervix in women would be considered an avoidable cancer today. Twenty years ago this cancer was the Number One killer of women. During this interval the death rate from cervical cancer has dropped about 50 per cent. In recent years the "Pap" test has given a tremendous impetus to the control of cervical cancer. A 1964 survey by the Gallup Organization indicated that 48 per cent of adult women claimed to have had a "Pap" test, whereas in 1961 this figure was only 30 per cent. From this data we can assume that 27½ million women have had at least one test, but this is not enough. Every woman should have this protection.

The efficiency of the "Pap" test in the control of cervical cancer has been demonstrated in Louisville, Kentucky,¹² where Pap smears have been done on a large group of women for the past ten years. For the last seven years not one single case of invasive cancer of the cervix has appeared among these women, proving that yearly cytological screening provides essentially 100 per cent protection, and one can say that a death from cancer of the cervix is a preventable death. It need only occur from personal indifference.

It may also be considered an avoidable cancer as well, for investigators are now finding a causal relationship to certain environmental factors. Cervical cancer has a much higher incidence in countries where adequate personal hygiene is difficult to obtain, and has the lowest incidence in countries in which the plumbing facilities are better. In Singapore it was demonstrated to me that those women who have access to a private bathroom have a lower incidence of cervical cancer than those who do not. It is extremely rare in nuns, and has the highest incidence among prostitutes. It occurs more frequently in married than in unmarried women, and even more so in women who marry several times. It is more frequent in those who marry young and who initiate sexual relations at an early age. It usually appears about 20 years after sexual intercourse begins, which corresponds in latency period with that of other more accurately measured forms of cancer.

A somewhat related and another avoidable cancer is cancer of the penis. I say related because wherever the incidence of cancer of the cervix is low, so is the incidence of penile cancer, and where one is very common, so is the other. Penile cancer is probably the oldest of avoidable cancers. It has been almost non-exist-

ent among the Jews in whom circumcision is performed at the end of the first week after birth as part of a religious rite. In Moslems circumcision is carried out before puberty, and they also have a low incidence of this cancer. In a series of 120 cases of this cancer at New York Memorial Hospital for Cancer and Allied Diseases, Dean¹³ reported that none of the patients had been circumcised in infancy. It has also been established that circumcision after the age of puberty is ineffective. In a country as health conscious as the United States, this cancer could be eradicated by mandatory circumcision and personal cleanliness. Where these practices are neglected the incidence is considerably higher as in Ceylon, South Africa, and Latin America. In India it may account for as much as ten per cent of all cancers in males and up to 20 per cent in China. Mexico, in fact, may have the world's highest known incidence of this disease. In the United States it amounts to from one to three per cent of all cancer.¹⁴

The changing social customs that can lead to cancer are complex and far reaching. Some customs, such as betel and nass chewing, are widespread and apparently satisfy important human desires. For instance, cancer of the oral cavity and pharynx is by far the most common neoplasm in India and the Philippine Islands. The Cancer Institute of Madras in India reports that 48 per cent of all malignant neoplasms were oral or pharyngeal in origin, with more than 20 per cent of them arising from the buccal mucosa. In contrast, buccal cancers in the United States account for only 4.6 per cent of cancers in males and 1.7 per cent in females.

In India, the Philippines, Ceylon, Burma, Pakistan and Guam the extremely high incidence of intraoral cancer occurs most frequently in the low income groups and is related to the national habit of chewing a mixture of tobacco and slaked lime with betel nut. This "quid" is placed in the mouth between the cheek and the gum and kept there most of the day. It stains their teeth and keeps their mouths filthy.

I have seen these "self-induced" cancers in the Far East. It is pitiful to see these people when you know that these cancers are not necessary and that they are avoidable.

Unfortunately a similar habit exists in the southeastern United States. It is "snuff-dipping," and is a fairly common habit, especially among older women in low income groups. It is strongly suspected that this habit is associated with the increased incidence of intraoral cancer that occurs in this area.

Snuff is no longer sniffed in the nose as was fashionable in the 18th century. Today a pinch of this flavored, powdered tobacco is placed in the gingival buccal gutter. The users suck on the quid most of the time they are awake. This seems to be a particularly habit-forming use of tobacco, and the prolonged use of it to a limited area of mucosa produces severe chronic local irritation that is an ideal environment for any carcinogen in tobacco to exert its effect by direct contact.¹⁵

Snuff dippers' intraoral cancers are not just a casual or freak occurrence. The United States Department of Agriculture reports that 34 million pounds of snuff was sold in 1961 and much of it in the southern states and in the Pacific northwest.

Brown and associates¹⁶ in Atlanta, Georgia, recently published their experience on 394 cases of snuff dippers' cancer. They found that 78 per cent of the cancers that occurred in the buccal gutter were in women and 75 per cent of them were confirmed snuff users and kept the quid at this location.

A report from Nashville, Tennessee by Rosenfeld and Calloway¹⁷ found that of the women in a group of 525 intraoral cancers, 90 per cent of them had carcinoma of the gingiva-buccal area and were habitual users of snuff.

This is in contrast to reports from Buffalo,¹⁸ the Mayo Clinic,¹⁹ and from New York City,²⁰ in which cancers of the oral cavity and pharynx occur about five times more frequently in men than in women.

In the Central Asian Republics of the U.S.S.R. a habit known as "Nass-chewing" is practiced. Nass is the meat from the nut of the nass tree. It is mixed with tobacco, lime, ash, and butter, and the "quid" is placed under the tongue and between the lower lip and the gums. This practice also causes cancer to develop at the site of application similar to those we have just described.

In a narrow zone across Central Africa occurs an unusual type of cancer—Burkitt's sarcoma. It was first thought to be limited to African children. More thorough studies revealed that it can appear in children of all races—European, Asian, Indian, as well as in adults, but this high incidence occurs only in those who live in areas within this belt which have an elevation of less than 5,000 feet; an annual rainfall of more than 200 inches, and a temperature that does not fall below 60 degrees Fahrenheit. These conditions suggested that this type of cancer could

be due to a virus that was possibly transmitted by a vector such as a mosquito.

These possibilities have now been almost confirmed by Dr. Michael Epstein of the Middlesex Hospital Medical School in London, who has been able to grow the cells of Burkitt's sarcoma in tissue culture and to show that these cells elaborate a virus-like particle believed to be the causative agent.

It should be pointed out that recently O'Connor²¹ has shown that a similar tumor occurs in children in this country, and Dorfman²² has demonstrated the same condition in children in Missouri. They both believe that lymphosarcoma in children in the United States, while being a rare disease, is similar to Burkitt's tumor in Africa in age distribution, clinical manifestation, cause and histological appearance. The unusually high incidence in a particular geographic area in Africa, its predilection for the bones of the jaw and face and the rarity of leukemic transformation, may reflect an attendant host susceptibility in children in that area in addition to the environmental factors.

There is a similar group of cancers which appear to be related to causal factors in our environment which we have not yet identified. The first of these is cancer of the stomach, which has been showing a remarkable decline for the past 30 years in the United States for no known reason. At the same time cancer of the stomach has been continuing to increase in Yugoslavia, Mexico, in India, and particularly in Japan, where it is the Number One cancer. It also continues to be a major cancer in the Soviet Union and the Countries behind the Iron Curtain, as well as in Iceland. Why? We don't know. It might be related in some way to the low protein diet of these people, but we are not certain. The Japanese who live in the United States do not have the same high incidence. The cause appears to lie in the difference in the environmental food habits of these different peoples.

We would like to know why American women have about seven times as much cancer of the breast as Japanese women. We think that there is some connection in the length of time they spend in nursing their children, but we need much more research into glandular and related functions to make sure. We should also like to know why cancer of the breast is more frequent in unmarried than in married women.

Cancer of the colon and rectum in the United States is the Number One internal cancer among men and women; 46,000 deaths will oc-

cur from it this year, and there will be 76,000 new cases. It is the only cancer in which the incidence is the same in both sexes. Yet in the same countries that have a high incidence of cancer of the stomach there is low incidence of cancer of the colon. It is infrequent in Mexico, Latin America, India, and in Japan.

Epidemiological studies just completed by Haenszel²³ of the National Cancer Institute show a definite increase in cancer of the colon in people in urban communities as compared with those in rural communities, and an appreciably higher rate in people of the northern part of the United States as compared with those in the southern states. These findings remain consistent in migrants from the northern states to the southern states, and vice-versa, as well as in migrants going to and from rural and urban centers.

It is interesting that colon cancer occurs only one tenth as frequently among the members of the Bantu tribe in Southeast Africa as it does with us. Yet cancer of the liver which accounts for 50 per cent of all cancer deaths among the Bantus, accounts for less than four per cent in Europeans and North Americans.²⁴ Again we must search for environmental factors to account for this contrasting incidence. Scientists speculate that it is probably due to the monotonous diet of the Bantu tribesmen which is deficient in milk and in meat in the early years. This may be the predisposing cause that leads to cirrhosis of the liver from which this form of cancer appears to develop. The opportunity exists here to identify the environmental carcinogens and add another preventable cancer to our list.

I will only mention the problem of the carcinogenic potentials of pesticides, of food additives—such as colors, flavors, emulsifiers, antioxidants and fungal contaminants. Likewise, cosmetics and certain medical preparations can only be listed, because they are very complex and much work needs to be done in this field.

From this discussion on preventable and avoidable cancers, and on "cancers arising from personal indifference," it is obvious that epidemiological studies must be continued in the search for causal environmental factors and that we must promote public health measures for the control of many cancers. We must educate people about preventable cancers and that the combating of certain deleterious social customs and addictions, as well as economic factors, is a necessary long term process requiring re-

search efforts in sociology, in psychology, and in health education.

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Ames

COMMENTARY

From

THE UNIVERSITY OF SOUTH DAKOTA



SCHOOL OF MEDICINE

NEWS PAGE

Beginning with this issue, the South Dakota Journal of Medicine is setting aside a page for news items of interest from the School of Medicine. We wish to thank Dr. Van Demark and his staff for their generosity and will use this page to keep you well informed of the current status of the school. Such subjects as new faculty members, grants received, curriculum improvements and new construction will be featured. Since the operation of a medical school is beset with problems, we will probably have a few words to say about these too. Such aspects as the financial support of the school, faculty salaries, selection of suitable medical students and the recruitment of new faculty are all very important in developing a modern progressive institution and require the attention of all those interested in medical education.

We hope our reflections and news items will stir sufficient interest so that, occasionally, some of you will respond with opinions and constructive criticisms. The object of this dialogue with you is the significant improvement of South Dakota's School of Medicine.

Charles R. Gaush, Ph.D.
Chairman
Publications Committee

GRANTS AWARDED

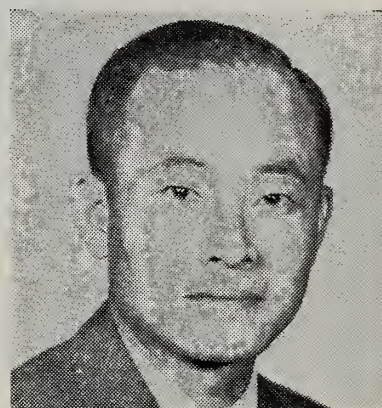
Several grants have been awarded to the Medical School and its faculty during the last few weeks. A sum of \$232,000 from the estate of Ralph W. Parsons was bequeathed to the school and the annual interest from this bequest, about \$10,000, will be used for research. Dr. Otto Neuhaus received a \$59,898 grant from PHS to continue his studies on plasma protein biosynthesis. Senator McGovern announced the award of \$42,615 from PHS for institutional research and a \$26,369 grant from the National Fund for Medical Education. The latter will be used for the expansion and improvement of our closed circuit TV system for teaching medical students. PHS has also announced the award of two re-

(Continued on Page 81)

NEW FACULTY



DR. BALEGNO



DR. SHIMAMURA

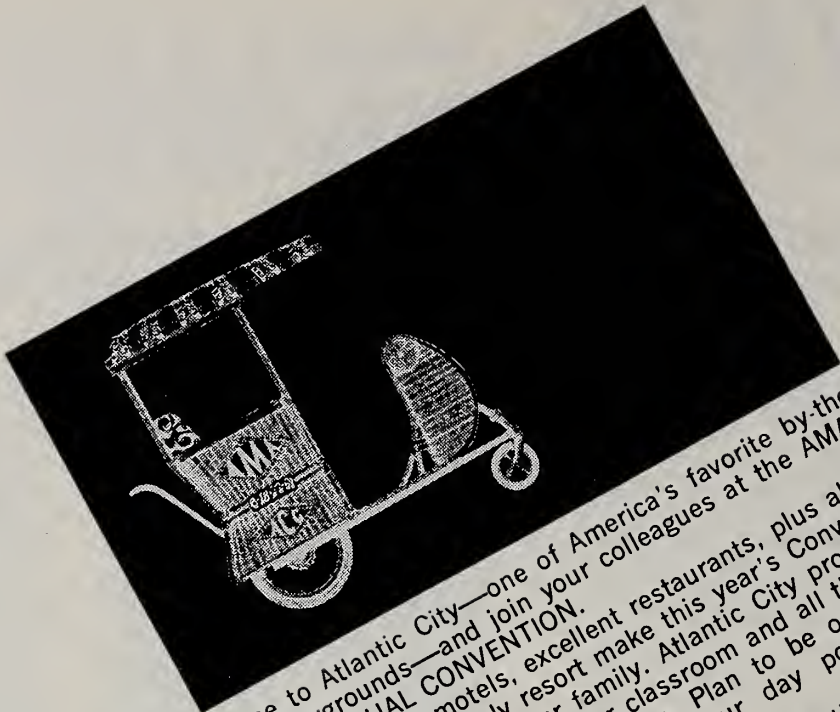
President Edward Q. Moulton has announced the appointment of two new faculty members in the Departments of Biochemistry and Pathology.

Dr. Hector F. Balegno was appointed Assistant Professor of Biochemistry after serving as research associate at Wayne State University School of Medicine in Detroit from 1965 to 1967. Dr. Balegno is a native of Argentina and received his Ph.D. from the University of Cordoba (Argentina) in 1948. He has held a number of appointments and was head of the Laboratory of Internal Medicine at the University of Cordoba from 1949 to 1951. He was appointed research associate at Wayne State Medical School, a position he held from 1957 to 1962. He then returned to Argentina as assistant professor in the Institute for Cell Biology at Cordoba where he served until he again returned to Wayne State in 1965.

Dr. Balegno worked with Dr. Otto Neuhaus at Wayne on the biosynthesis of plasma proteins. Dr. Neuhaus was recently named Chairman of the Department of Biochemistry and both investigators will continue their research on the hepatic control of plasma protein biosynthesis.

Dr. Tetsuo Shimamura, Assistant Professor of Pathology, was born in Yokohama, Japan and received his M.D. from the University of Yokohama School of Medicine in 1959. He served a rotating internship in the U. S. Army Medical Command in Japan and also in the Bexar Coun-

(Continued on Page 81)



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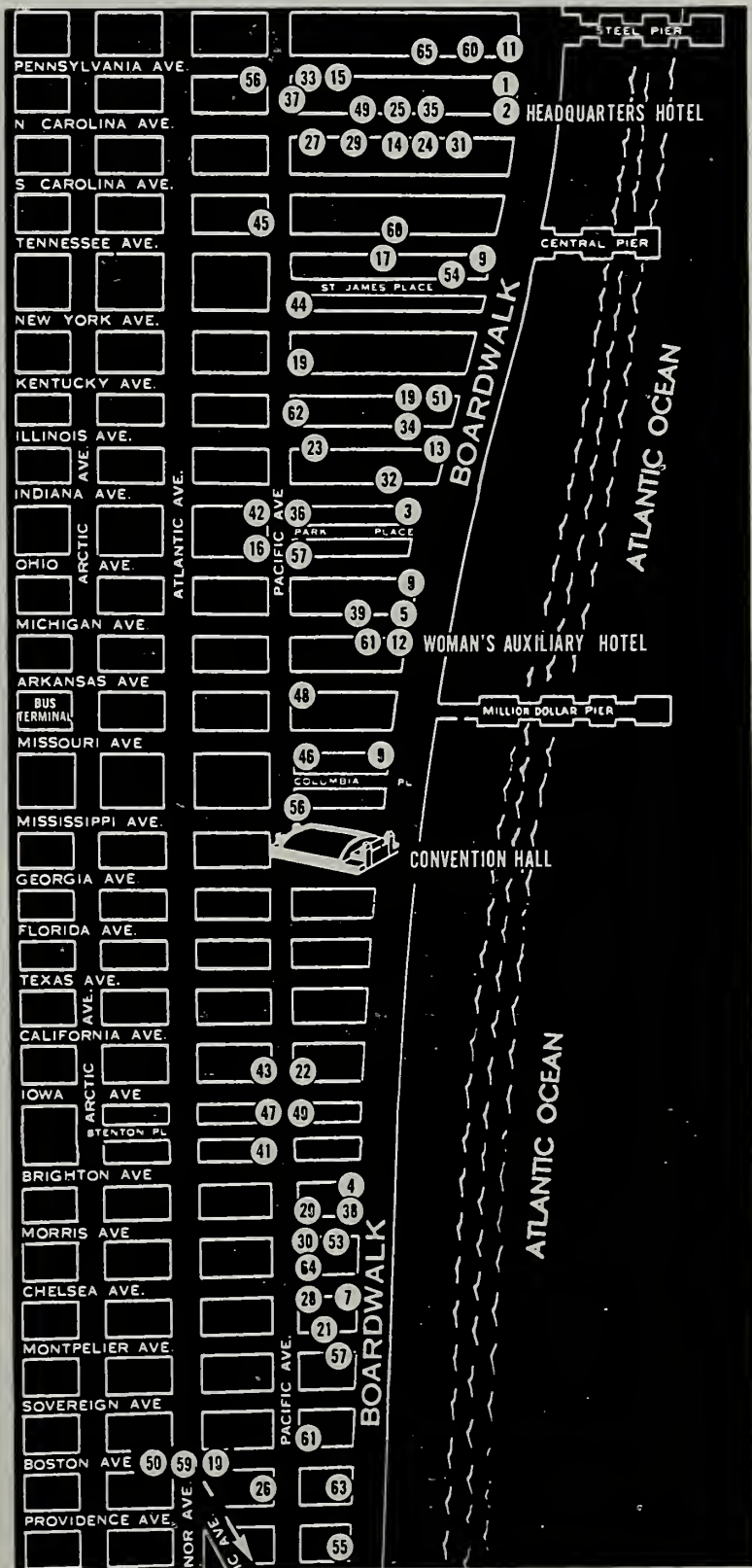
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2.	CHALFONTE— HADDON FALL*.....	(HEADQUARTERS HOTEL— NO ROOMS AVAILABLE)			
3.	CLARIDGE HOTEL*.....	10-26		14-30	58-88
4.	DEAUVILLE HOTEL*.....	14-20		16-28	45-130
5.	DENNIS HOTEL*..... PAC	11-21		15-34	46-95
6.	HOLIDAY INN OF ATLANTIC CITY*.....	12-20	17-19	16-24	40-82
7.	LA CONCHA HOTEL*.....	12-14		16-24	35-75
8.	MARLBOROUGH-BLENHEIM* (Ocean Wing Only).....	21-25		21-25	42
9.	MAYFLOWER HOTEL*.....	8-10	10-12	10-16	20-24
10.	PRESIDENT HOTEL*..... PAC	11-20		11-20	23-50
11.	SEASIDE TOWER HOTEL*.....	12		14-22	44-60
12.	SHELburne— EMPRESS HOTEL*.....	(WOMAN'S AUXILIARY HEADQUARTERS)			
13.	TRAYMORE*..... PAC	8-22		10-24	25-100

Map No.	OFF-BOARDWALK HOTELS	Singles	Doubles	Twins	Suites
14.	CAROLINA CREST HOTEL. PAC	10-12	12	12-14	
15.	COLTON MANOR HOTEL*..... PAC	12-21		15-24	42-72
16.	EASTBOURNE HOTEL..... PAC	7-9	10	11	
17.	FLANDERS*..... NAC	8	10	14	
18.	STERLING..... PAC	10-12	12-14	12-14	

Map No.	MOTELS	Singles	Doubles	Twins	Suites
19.	ACAPULCO MOTEL.....	12	14	16-20	
20.	ALGIERS MOTEL*.....	12-14	14-16	12-20	45
21.	ALOHA MOTEL.....	14-16		14-28	
22.	ASCOT MOTEL.....	14-16		14-18	
23.	BALA MOTEL.....	12-18		16-24	
24.	BARBIZON MOTEL INN.....	11-13	15	17-23	60
25.	BARCLAY MOTOR INN.....	20-28		20-30	55-65
26.	BLAIR MOTOR INN.....	12-16		16-22	
27.	BURGUNDY MOTEL.....	12-16		16-26	
28.	CARIBE MOTEL.....	10-12	12	14-18	
29.	CAROLINA CREST MOTEL.....	14-16		14-16	
30.	CASTLE ROC MOTEL.....	14	14-20	14-20	40
31.	CATALINA MOTEL.....	14-20		14-18	
32.	COLONY MOTEL*.....	10-22		12-24	45-80
33.	COLTON MANOR MOTEL*.....	22-28		24-30	54-90
34.	CONTINENTAL MOTEL.....	14-16		14-20	
35.	CORONET MOTEL.....	16-22	18-26	16-24	50-60
36.	CRILLON MOTEL.....	16-22		18-24	
37.	CROWN MOTEL.....	14	16	18	
38.	DEAUVILLE MOTEL*.....	14-24		16-32	100-130
39.	DENNIS MOTEL*.....	15-25		15-29	
40.	DIPLOMAT MOTEL.....	10-12		14-24	30-36
41.	DUNES MOTEL.....	16	16-20	16-20	
42.	EASTBOURNE MOTEL.....		16-20	16-24	
43.	ELDORADO MOTEL.....	16		14-18	
44.	ENVOY MOTEL.....	10	12	14-16	
45.	FIESTA MOTEL*.....	14-16		16-22	35
46.	FOUR SEASONS MOTEL.....	14-18		18-24	
47.	GALAXIE MOTEL.....	12-16		10-16	
48.	HOWARD JOHNSONS*.....	14-18	14-18	18-30	44-90
49.	LA FAYETTE MOTOR INN*.....	(CO-HQS HOTEL NO ROOMS AVAILABLE)			
50.	LINCOLN-ROOSEVELT BEACH MOTEL.....	16-18		14-20	18-28
51.	LOMBARDY*.....	12-24		14-26	
52.	MALIBU MOTEL.....	12-14		16-20	
53.	MARDI GRAS MOTEL.....	14-16		16-22	25
54.	MAYFLOWER MOTEL*.....	10-12		10-16	
55.	MONTE CARLO BEACH MOTEL.....	11		13-15	
56.	MONTEREY MOTEL.....	14-16	14-16	18-20	
57.	MOUNT ROYAL*.....	12-24		14-26	
58.	PAGEANT MOTOR INN MOTEL*.....	16-20		18-26	40-44
59.	PRESIDENT MOTEL*.....	13-22		13-22	
60.	SEASIDE MOTEL*.....	14		16-22	
61.	SHELburne— EMPRESS MOTEL*.....	12-24		14-34	
62.	SORRENTO MOTEL*.....	10-14		16-22	
63.	STRAND OF ATLANTIC CITY MOTEL*.....	10-14		13-17	
64.	TEPLITZKY'S MOTEL.....	14		14-18	
65.	TERRACE*.....	14		16-22	
66.	TRINIDAD MOTEL.....	14-16	*	16-28	
67.	TROPICANA MOTEL.....	8	10-12	14-18	20-24

*Restaurant and/or Coffee Shop on premises

All 100% Air Conditioned Except as Noted:

NAC (No Air Conditioning); PAC (Partial Air Conditioning)

MINUTES OF THE COUNCIL MEETING

Sunday, January 22, 1967, 10:30 a.m.
Ramada Inn, Sioux Falls, S. D.

The meeting was called to order by J. P. Steele, M.D., presiding chairman in the absence of E. T. Lietzke, M.D. Those present for roll call were Drs. J. J. Stransky, P. H. Hohm, E. J. Perry, J. P. Steele, G. R. Bartron, A. J. Tieszen, J. A. Muggly, C. F. Johnson, C. E. Tesar, R. H. Quinn; Commission chairmen—Drs. G. W. Knabe, Jr., and M. R. Cosand. Also present were G. E. Tracy, M.D. and Richard C. Erickson.

Nominations for the Community Service Award were opened. G. E. Tracy, M.D. of the Second District nominated G. R. Bartron, M.D. Mr. Erickson read a letter from E. H. Peters, M.D. of the Seventh District nominating Paul Reagan, M.D. for the award. A secret ballot was taken. The results will be revealed at the annual meeting.

Nominations for the Distinguished Service Award were opened. Dr. G. E. Tracy nominated Mrs. William Fish. Dr. C. F. Johnson nominated Dr. Frank Haas, Dr. Paul Hohm and Mrs. Lucille Dory. A secret ballot was taken, and the results will be revealed at the annual meeting.

Dr. Hohm moved that the reading of the minutes of the previous meeting be dispensed with inasmuch as they have been published. The motion was seconded by Dr. C. F. Johnson and carried.

Commission Reports

Report of the Commission on Medical Service

REPORT OF THE CHAIRMAN, COMMISSION ON MEDICAL SERVICE, SOUTH DAKOTA STATE MEDICAL ASSOCIATION TO THE COUNCIL, PREPARED FOR THE MEETING IN JANUARY, 1967

The Commission on Medical Service has had one formal meeting since the last meeting of the Council. Minutes of the meeting of the Commission are attached herewith. Subsequent to this meeting, Mr. Richard C. Erickson communicated with Irvin Belzer, M.D., T.B. Control Officer, State Health Department, Pierre, concerning free TB Clinics. Dr. Belzer reported back to Mr. Erickson regarding his concept of the development of free tuberculosis clinics in this state.

Dr. Gerald Tuohy of Sioux Falls attended a meeting of the South Dakota State Nursing Association in Sioux Falls, October 28, 1966, as a representative of this Commission. A copy of his report is enclosed herewith.

The chairman of this Commission has been attending meetings of Heart-Cancer-Stroke Planning Committee. At the meeting November 19, 1966, the program for the development of this activity was discussed in detail. It was announced that the application for grant for funds for the planning committee is now in Washington, D. C., and will be reviewed soon. Subsequently it has been made known to the chairman of this Commission by Dr. Warren Jones that the planning grant application has been looked upon favorably and that the grant for about \$54,000.00 for the coming year has been approved. It was also announced that a coordinator or chairman for Cancer-Heart-Stroke Program is being sought. Although this person would preferably be a physician, if a qualified individual in the paramedical area were available his application could be considered favorably. An attractive salary for this person is in the offing. Applications for this position can be sent to Mr. Richard Erickson at the South Dakota State Medical Association office, to Dr. Warren Jones at the School of Medicine, University of South Dakota, or to members of the Planning Committee.

Dr. J. A. Anderson will attend a meeting of the Rural Health Committee of the A.M.A. in North Carolina in mid-March of 1967 and Dr. J. B. Gregg will attend the First National Congress on Socio-

Economics of Health Care in Chicago on January 22-23, 1967. Reports of these meetings will be forthcoming later.

This Commission recommends that the South Dakota State Medical Association take due and careful notice of the plans of President Edward Q. Moulton, University of South Dakota in regard to the development of higher education in this state with special reference to his thoughts in regard to the development of the Medical School and most especially those which pertain to the recruitment of teaching personnel by making salaries and other fringe benefits more attractive and competitive with other institutions of higher learning.

Respectfully submitted,
John B. Gregg, M.D., Chairman
Commission on Medical Service.

Minutes of the meeting of the Commission on Medical Service of the South Dakota State Medical Association in the office of the Dean, School of Medicine, University of South Dakota, Vermillion, South Dakota, on October 29, 1966. Commission members present were Drs. Adams, Anderson, Amundson, Jahraus, Jones, Tracy, Willcockson, and Gregg. Also present were President Edward Q. Moulton, Drs. Brogdon, Knabe, and Lietzke and Mr. Richard C. Erickson.

The meeting convened at 12:45 p.m. The primary purpose of the meeting was to give the Medical School Affairs Committee which is a function of the Commission on Medical Service the opportunity to meet President Moulton, to discuss with him his ideas for the future development of the Medical School and to offer to him the services of this commission and ultimately the parent organization, the South Dakota State Medical Association.

President Moulton reported that he hopefully envisions the ultimate development of a four year medical school for this state. A sum of money has been placed in the future budget of the University for this purpose. President Moulton feels that there should be appointed a study committee to delve into this matter and consider it from all angles and then report its feasibility.

The subject of the development of a two year dental school for the State of South Dakota, the reasons for its need, in conjunction with the presently available facilities of the Medical School and those to be developed in the future was also discussed. It was also announced that there had recently been started a dental technician training program at the Medical School at the University of South Dakota.

President Moulton envisions an improvement in the salary scale of the University of South Dakota, throughout the entire University in an effort to help develop and keep the teaching personnel in the University. A means to provide health-accident-life insurance program as a "fringe benefit" and plans to improve retirement benefits were also discussed.

In conclusion President Moulton stressed the need for cooperation between the State Medical Association and the Medical School in the development of the various programs to come.

The following matters of business were considered by the Commission:

(1) The resolution regarding PKU testing, submitted by Dr. Heinrichs of Watertown was discussed. Dr. Gerald Tracy brought with him a copy of the article on this subject which Dr. Heinrichs has prepared for the Journal of the South Dakota State Medical Association. It was the feeling of the Commission that Dr. Heinrichs should be commended for his efforts to keep the physicians of this state acquainted with the current thinking regarding this subject. However, it was the consensus of the Commission that where there are several methods of testing for this situation and the ideas presented being

those of an individual physician, the Commission should not endorse the article or the individual physician.

(2) Dr. Gerald Tuohy of Sioux Falls had attended a meeting of the planning organization of the South Dakota State Nursing Association in Sioux Falls on October 26, 1966. He reported that plans are now being developed to enhance the nursing situation in South Dakota. A formal report will be submitted later.

(3) Dr. Jones gave a brief report concerning the development of the Cancer-Heart-Stroke Program for the State of South Dakota. The South Dakota organization will be centered around the Medical School and has voted to join with the State of Nebraska and possibly the State of North Dakota in this program. Dr. Jones is a member of the planning organization by virtue of his position in the Medical School. A representative of this Commission will be seated with the planning organization. Recently the chairman of the Commission has represented the commission at several meetings of this organization. If any other member of the Commission would like to sit in on these planning activities, the chairman of the Commission will be glad to step aside and allow him to do so.

(4) The Manpower survey for this area which has been sent to each member of this Commission was not discussed other than briefly because much of the material contained therein has been covered in the discussion with President Moulton.

(5) It was announced that there will be a meeting of the Rural Health Committee of the A.M.A. in North Carolina in mid-March 1967. Dr. J. A. Anderson has volunteered to attend this meeting.

(6) Drs. Knabe and Jones discussed the affairs of the Medical School. They reported there is harmony and close cooperation in the Medical School. Dr. Knabe reported that in its present concept he has withdrawn his name from the list of potential candidates for the position of Dean. It is his feeling that as things now stand the position of Dean of the Medical School entails disproportionately large amounts of administrative work and not enough time for matters pertaining to academic and practical medicine. He will prepare suitable recommendations with his concepts as to how the Deanship can be made more attractive to a potential candidate. It was reported that several other candidates for the position of Dean are being interviewed by the search committee.

Dr. Jones reported that there has recently been some shortage of material in the dog laboratory. Dr. Jones had contacted Senator Bartron regarding the introduction of legislation to correct this matter. No reply from Dr. Bartron had been received as of this date. It was suggested to Dr. Jones that this matter might wisely be deferred for the present because of the anti-vivisectionists on a national level.

(7) Dr. Tracy discussed the development of a uniform physical examination blank for all of the institutions of higher learning in South Dakota. He noted that the form now in use at the University of South Dakota has met with almost universal acceptance throughout the state.

Because of changes in policy regarding immunization of children, by the American Academy of Pediatrics, it will be necessary to update the recommendation of the State Medical Association to the physicians of South Dakota soon. Dr. Tracy will make arrangements for this notification to be sent to the physicians of this state.

There being no further business the meeting was adjourned with the provision that minutes of the meeting would be compiled by the Chairman of the Commission and mailed to each Commissioner.

J. B. Gregg, M.D., Chairman
Commission on Medical Service

REPORT TO THE SOUTH DAKOTA ASSOCIATION REGARDING PLANNED STUDY FOR NURSING NEEDS IN THE STATE OF SOUTH DAKOTA

A meeting of medical and nursing representatives from eight South Dakota organizations was held on October 28, 1966. The purpose of this meeting was to determine and define the projected needs in the field of nursing in the state of South Dakota over the next several decades.

It has been demonstrated in the state of South Dakota that there are more endorsements of nursing personnel outside the state than in the state. Reasons given for this are:

1. husbands seeking employment other than in South Dakota,
2. lack of clinical experience,
3. desire for master programs,
4. and the need for implementation of salary increments.

For these reasons the planning committee decided to study the program in depth and for these reasons an organization called the South Dakota Planning Council for Nursing Resources has been created. The objectives of this study parallel those done in the state of Illinois in 1965. These are:

1. to identify, assemble, and evaluate social, legal, scientific and economic data relevant to nursing in South Dakota available from several state organizations and agencies,
2. to identify and obtain data needed but not available,
3. to document the nature of nursing at present and to project what it should be in 1980,
4. to project the needs, both quantitative and qualitative, for the several kinds of nursing personnel including supervisory and administrative for the variety of health services in South Dakota,
5. to recommend action offering the greatest likelihood for overcoming shortages, increasing the quality of nursing service and promoting the most effective utilization of nurses available,
6. to suggest the role in implementing recommendations of this study which appropriately should be played by educational institutions, nursing organizations, hospitals (individually and in association) other health agencies, medical societies, physicians, the legislature, state government, and citizens at large,
7. to culminate in the reports succinctly written and so widely distributed as to contribute to the program needed.

It is also felt that this commission should study the attrition rate in nursing programs and determine the kind of programs we need. The planning that is done should be a continuing study updating, collating of material and preparing of reports. It is felt that this information can be correlated with statistics from the Bureau of Health Manpower in the USPHS trends toward specialization and also the trends in the United States regarding physicians, dentists, and other medical groups.

Sources of financial support for this study will probably involve private funds and the possibility of federal support will be explored.

Certain help can also be obtained from South Dakota State University which will supply office space, transportation and a person who can search out data in the state. It is the desire of this planning committee that the Medical Association in the state of South Dakota contribute their support by sending a representative to the planning committee and participating with suggestions and criticisms on this projected study.

Furthermore, sponsorship of this planning council will be by all of the organizations: namely, the South Dakota League of Nursing, the South Dakota Nursing Association, the South Dakota Medical Association and the South Dakota Board of Nursing and not any individual group. It is felt that the findings of this council should contribute greatly to the organization and implementation of better nursing care in South Dakota.

Follow-up meetings of the planning committee are tentatively scheduled for December 1966.

Gerald F. Tuohy, M.D.

Dr. Tesar discussed the nursing report regarding the two year R.N. training. Dr. Hohm requested that Dr. Gregg and Dr. Tuohy give a further report on the nursing study group at the next Council meeting.

Mr. Erickson discussed the scholarship funds for University medical students. Dr. Hohm moved to continue these scholarships for another year. The motion was seconded by Dr. Johnson and passed unanimously. The scholarships include two \$100.00 scholarships for a freshman and a sophomore; a \$450.00 tuition scholarship for an incoming freshman; and \$200.00 travel expenses for the delegate to SAMA.

Dr. Knabe spoke on the need for the State Association to have closer and continual planning with the University Medical School. Dr. Knabe moved that the Commission on Medical Service charge the subcommittee on Medical School Affairs to study problems of the present status and future growth in medical and health education in the State of South Dakota. The motion was seconded by Dr. Tesar and passed unanimously. The report of the Commission on Medical Service was accepted by the Council.

REPORT OF THE COMMISSION ON SCIENTIFIC MEDICINE

No. 10

October 1, 1966

The meeting was called to order at the medical association headquarters in Sioux Falls at 2:00 P.M. by Chairman G. W. Knabe, Jr., M.D. Present for roll call were Drs. G. W. Knabe, R. B. Leander, Bruce Lushbough, S. W. Fox, E. H. Heinrichs, and Noel deDianous. Also attending the meeting were Irvin Belzer, M.D. and Mr. Mullen of the State TB Control Program.

1. Mr. Mullen and Dr. Belzer discussed the TB Program in South Dakota and answered questions asked by the Commission members. Dr. Belzer indicated that approximately 60 new cases are found each year. They stated that the main problem in the program is what happens to the patients after they are diagnosed as tuberculosis cases. They have encountered a problem in receiving reports from the physicians, but have not requested the physicians to submit reports. It was suggested that an informational packet be prepared by the TB Control Office in conjunction with the State Medical Association, for distribution to the physicians in the state, outlining the administrative procedures, so the doctors may be informed of what they are expected to do. Information in this packet will be submitted to the Commission on Scientific Medicine for approval prior to the mailing. It was suggested that Dr. Belzer and Mr. Mullen be invited to appear at District Society meetings to discuss the program with physicians in the state.

2. **The Diabetes Detection Drive** for 1966 was discussed. The executive office was requested to obtain information on the 9th District plan for distribution to other districts as a commendable program. The executive office is to obtain information from the National Diabetes Association and send it to the Diabetes chairman in each district, or the District Sec-

retary. All programs are to be handled on the district level. All districts that sponsor a Diabetes Week activity are to be asked to submit a report to the executive office.

3. Dr. Heinrichs and Dr. Lushbough discussed **Heart Disease and Heart, Cancer and Stroke programs**. Dr. Heinrichs discussed developments in the proposed diagnostic center for South Dakota. Dr. Heinrichs will prepare a short article for the Journal on the importance of PKU testing on all newborns.

4. The Commission went over the format for the **annual meeting**. The specialty groups are to be contacted again regarding their selection of guest speakers. It was decided to have four workshops on Tuesday afternoon of the annual meeting including possibly Cancer Chemotherapy, Psychiatry, Rheumatic Heart Disease, and Tuberculosis and Pulmonary Diseases. Dr. Heinrichs, Dr. Leander, Dr. Lushbough, and Dr. deDianous will be in charge of arranging the workshops. It was agreed that each workshop should be limited to twenty five participants with advance registration required.

The meeting adjourned at 4:45 P.M.

Respectfully submitted,
George W. Knabe, Jr., M.D., Chairman,
Commission on Scientific Medicine, SDSMA

REPORT OF THE COMMISSION ON SCIENTIFIC MEDICINE

No. 11

January 4, 1967

The chairman apologizes for his apparent dereliction of duties in recent months. This has been occasioned by an increase in work when his associate left and also a result of being assigned temporarily new administrative duties. In this connection, he acknowledges the timely and capable assistance of those clinical pathologists who are freely donating time to the teaching of medical students. Other members of the commission have actively continued their interest and work.

1. **Tuberculosis Control:** There continues to be misunderstanding and lack of coordination of effort between physicians and the State Health Department in this area. Dr. Irvin S. Belzer, Tuberculosis Control Officer, advises that the purpose of establishing tuberculosis clinics in various centers of the state is to serve patients who might otherwise neglect follow-up care as well as to provide bases for the services of field Tuberculosis Public Health Nurses. The Commission will appreciate any cooperative efforts of Dr. Belzer and Mr. Mullen to satisfactorily implement the TB law. However, it continues to be disappointed by the lack of response to its recommendations on this program. SDSMA, after an extensive hospital and laboratory survey and with the consultation of many physicians, made recommendations for implementation of the TB Control and Treatment Law (S.D.J. of Medicine, August, 1965, page 40). These were favorably received by the State Health Officer who wrote in September 1965 that they would be presented to the Public Health Advisory Committee and that approval was likely. No action has yet been taken on these and inquiries about fees, handling of diagnostic procedures, and other matters have not been adequately answered. Continued study of administrative and medical methods for tuberculosis management is indicated by all groups concerned. The following physicians will attend a USPHS Symposium on tuberculosis in Omaha January 11, 12, and 13: Drs. R. J. Zakahi, M. R. Ferrell, J. A. Cline, V. K. Cutshall.

2. **Diabetes:** Dr. S. W. Fox has identified the physicians in the various districts who are concerned with detection programs. Organized clinics are most applicable to large cities. It may be that screening of high risk groups may be more rewarding. The

Commission's role will be to encourage physicians to sponsor detection programs and to collect and disseminate information about successful drives.

3. Heart, Cancer, and Stroke Program: A progress memorandum on the South Dakota-Nebraska program has been sent by Dr. Warren L. Jones. Members of the Planning Committee will attend a conference on Regional Medical Programs called by H.E.W. in Washington January 15-17, 1967.

4. Annual Meeting: Scientific sessions, June 5, 6, 1967 in Rapid City at the Surbeck Center of the South Dakota School of Mines will follow the same format used in the 1966 meeting.

Respectfully submitted,
George W. Knabe, Jr., M.D., Chairman,
Commission on Scientific Medicine SDSMA

Report of the Commission on Scientific Medicine

Dr. Knabe discussed the T.B. Control Program.

Dr. Stransky moved that the report of the Commission on Scientific Medicine be accepted. The motion was seconded by Dr. Hohm and carried.

Report of the Commission on Communications

No written report was submitted by the Commission on Communications.

A discussion was held on the possibility of the Association sponsoring a booth at the State Fair. Dr. Bartron moved that the State Association contact the American Medical Association regarding a booth and then establish this booth at the State Fair. The motion was seconded by C. F. Johnson, M.D., and passed unanimously.

Commission on Liaison with Allied Organizations

M. R. Cosand, M.D., gave an oral report on the work of the Commission on Liaison with Allied Organizations. He announced that \$50.00 had been given to the League of Nurses for their Health Careers program.

A discussion was held on the labeling of prescription drugs. The Commission recommended the Association go on record as being in favor of labeling prescription drug bottles. Dr. Muggly moved that the oral report be accepted. The motion was seconded by Dr. Hohm and carried.

Commission on Internal Affairs

SOUTH DAKOTA STATE MEDICAL ASSOCIATION INCOME

Item	Budgeted 1966-67	Proposed 1967-68
State Dues	\$47,500.00	\$48,000.00
Annual Meeting	9,000.00	9,000.00
Interest	400.00	400.00
Refunds & Misc.	1,000.00	1,000.00
Car Reimbursement	1,080.00	1,140.00
	<u>\$58,980.00</u>	<u>\$59,540.00</u>

EXPENSES

Item	Budgeted 1966-67	Proposed 1967-68
Salary, Exec. Sec.	\$ 6,600.00	\$ 6,600.00
Salary, Other	10,500.00	11,100.00
Social Security	700.00	600.00
Legal & Audit	1,200.00	2,600.00
Tele. & Telegraph	1,800.00	2,000.00
Office Suppl. & Equip.	2,500.00	2,200.00
Dues & Subscriptions	1,500.00	1,400.00
Officers Travel		
Physicians Travel	4,500.00	4,300.00
(Out-of-State)		
Annual Meeting	8,000.00	8,500.00
Public Relations	3,500.00	3,000.00

Rent	3,000.00	3,000.00
Miscellaneous	100.00	100.00
Postage	2,200.00	2,200.00
Legis. Expense	2,200.00	1,000.00
Benevolent Fund	400.00	400.00
Medical School End.	200.00	200.00
Ladies Auxiliary	800.00	800.00
Car Expense	1,100.00	2,100.00
Clinical Pathology	800.00	600.00
Staff Travel	4,500.00	4,500.00
Insurance	100.00	100.00
Employment Tax	25.00	100.00
Employee Relations	1,600.00	1,600.00
	<u>\$57,825.00</u>	<u>\$59,000.00</u>
Reserve	1,155.00	540.00
	<u>\$58,980.00</u>	<u>\$59,540.00</u>

JOURNAL INCOME

Item	Budgeted 1966-67	Proposed 1967-68
Advertising	\$18,000.00	\$18,500.00
Subscriptions	1,200.00	1,200.00
Miscellaneous	600.00	600.00
Refunds	500.00	800.00
	<u>\$20,300.00</u>	<u>\$21,100.00</u>

JOURNAL EXPENSES

Item	Budgeted 1966-67	Proposed 1967-68
Salary, Editor	\$ 720.00	\$ 720.00
Salary, Staff	2,400.00	2,400.00
Legal & Audit	50.00	50.00
Rent	300.00	300.00
Tele. & Telegraph	175.00	250.00
Social Security	100.00	110.00
Office Supplies	16,255.00	16,870.00
Postage	200.00	300.00
Travel	100.00	100.00
	<u>\$20,300.00</u>	<u>\$21,100.00</u>

GROUP LIFE — INCOME

Item	Budgeted 1966-67	Proposed 1967-68
Premiums	\$30,000.00	\$28,000.00

GROUP LIFE — EXPENSES

Item	Budgeted 1966-67	Proposed 1967-68
Payment to Insurance Company	\$29,100.00	\$27,300.00
Postage	50.00	50.00
Legal & Audit	50.00	50.00
Supplies	50.00	50.00
Balance to Surplus	750.00	550.00
	<u>\$30,000.00</u>	<u>\$28,000.00</u>

BUILDING FUND — INCOME

Item	Budgeted 1966-67	Proposed 1967-68
Blue Shield Rent	\$ 5,100.00	\$15,996.00
Association Rent	3,000.00	3,000.00
Journal Rent	300.00	300.00
Bd. of Exam. Rent	600.00	600.00
Nurses Assoc. Rent	1,080.00	
OAA Rent	2,400.00	
	<u>\$12,480.00</u>	<u>\$19,896.00</u>

BUILDING FUND — EXPENSES

Item	Budgeted 1966-67	Proposed 1967-68
Janitor & Repair	\$ 2,300.00	\$ 3,700.00
Utilities	1,800.00	3,000.00
Interest	2,600.00	3,396.00
Repayment of Loans	2,780.00	5,300.00

Legal & Audit	1,000.00	1,000.00
Taxes & Insurance	2,000.00	3,500.00
	<u>\$12,480.00</u>	<u>\$19,896.00</u>

Mr. Erickson discussed the proposed budget for 1967-68 for the State Association. Dr. Stransky moved to accept the Association portion of the budget. The motion was seconded by J. A. Muggly, M.D. and passed unanimously.

A brief discussion was held on the Journal and Group Life budget. P. H. Hohm, M.D. moved to accept these budgets and J. J. Stransky, M.D. seconded the motion. It passed unanimously. Mr. Erickson discussed the Building Fund budget. Dr. Bartron moved to accept the Building Fund portion of the budget. The motion was seconded by Dr. Muggly and carried.

COMMISSION ON LEGISLATION AND GOVERNMENTAL RELATIONS

October 1, 1966

Executive Office Sioux Falls, South Dakota

The meeting was called to order at 10:00 A.M. by Chairman, Robert H. Quinn, M.D. Present for roll call were the following physicians: R. H. Quinn, M.D.; James Reagan, M.D.; C. E. Tesar, M.D.; R. W. Honke, M.D.; R. J. Foley, M.D.; R. J. Bareis, M.D.; H. R. Wold, M.D.; and Bill Church, M.D.

A discussion on the mail order drug situation in South Dakota was held. The executive office was instructed to contact Mr. Harold Schuler of the Pharmaceutical Association concerning the campaign of the Senior Citizens Council of Washington, D. C. to have prescriptions mailed to them for processing. At the present time, the Pharmaceutical Association is not planning to introduce any legislation at the 1967 session.

A discussion was held on the abortion legislation in South Dakota. Dr. Orr indicated that the Ob-Gyn Society would not be taking any stand on this type of legislation. At the present time, it does not appear that a bill will be introduced at the next session. It was the feeling of the Commission that until such time as the physicians in South Dakota can present a united front on this matter, the Medical Association oppose such legislation. If a bill is introduced in 1967, the Commission members are to be contacted for recommendation. If necessary, a meeting could be held in Pierre.

LSD Drug legislation from other states was distributed and considered by the Commission members. Dr. Church moved that the Commission recommend to the Council that the South Dakota State Medical Association support legislation patterned after the Nevada law regarding the control of LSD. The motion was seconded by Dr. Wold and carried.

Dr. Quinn discussed the possibility of members of the Commission being available to travel to Pierre if necessary to appear before committees. It was decided that a meeting on a Tuesday, Wednesday or Thursday, in Pierre would be most advantageous for the Commission members during the legislative session. Mr. Erickson will be asked to determine if a meeting of this type is necessary.

A discussion on Title 19 was held. Mr. Erickson gave a brief oral report of the present status of this Plan. He indicated that the appropriation for operation of this program will be included in total funding for the Welfare Department. Income limits and scope of benefits of the program were discussed. It was the feeling of the Commission members that there should be a difference in income limits for the rural

population and urban population in this program. Dr. Church moved that the executive office obtain a copy of the Title 19 Plan which has been submitted to the Kansas City HEW office for distribution to the Commission members for study. The motion was seconded by Dr. Bareis and carried.

Mr. Erickson discussed background information on the proposed suicide law. Dr. Church moved that the Commission on Legislation not recommend any change in the suicide law at this time. The motion was seconded by Dr. Wold and carried.

The proposed law for registration of Inhalation Therapists was discussed. Dr. Foley moved that the Commission make no recommendation concerning this proposed law at the present time; that additional information be obtained from other states. The motion was seconded by Dr. Tesar and carried.

The Commission considered the resolution passed by the Council of the South Dakota State Medical Association concerning separate billing. Dr. Tesar moved that the Commission report to the Council that additional legal opinions have been obtained and they are concurrent with the opinion of our own South Dakota legal advisor. If the Council wishes the Commission to continue the study of this problem, they will continue to do so. The motion was seconded by Dr. Reagan and carried.

The meeting adjourned at 1:15 P.M.

R. H. Quinn, M.D. held a brief discussion on the Resolution of the Council concerning separate billing. Dr. Bartron moved to table consideration of the resolution. The motion was seconded by Dr. Quinn. The motion passed. Vote—7 for, 3 against.

Brief discussions were held on the LSD Bill which Dr. Bartron has submitted to the Legislature, the pharmacy bill and a gunshot wounds bill and a proposed bill on dispensing medicines in offices at no profit.

Dr. Knabe discussed the dog law requiring dogs to be offered to the Medical School before they are destroyed. Dr. Perry moved that the Commission on Legislation lay the groundwork for a dog bill in the next legislative session. Dr. Muggly seconded the motion and it passed unanimously.

Mr. Erickson suggested the Medical Association hold a luncheon for legislators. Dr. Perry moved that the luncheon be held. Dr. Johnson seconded the motion and it passed unanimously. It was decided that all legislators, the councilors, officers and commission chairmen of the South Dakota State Medical Association should be invited. Dr. Quinn suggested that the Commission on Legislation also plan to meet in Pierre at the time of the luncheon.

OLD BUSINESS

Mr. Erickson reported on activities in the executive office since the last Council meeting.

Dr. Quinn discussed Title 19 and meetings with the Welfare Commission. No action was taken.

J. P. Steele, M.D., gave a report on the South Dakota Health Institute computer project. Dr. Stransky recommended that the Council receive annual reports on this project even if there is no progress. Dr. Hohm moved that this report be accepted and that the chairman keep the Council informed of future developments. The motion was seconded by Dr. Muggly and passed unanimously.

Dr. Hohm discussed the Heart, Cancer and Stroke Program for the information of the Council. No action was taken.

Mr. Erickson gave a report on the information requested from the Harold Diers Company.

Harold Diers Company
Insurance Administrators & Counselors
Nebraska — South Dakota
506 City National Bank Bldg.
Omaha, Nebraska

December 15, 1966

Mr. Richard C. Erickson, Exec. Sec.
South Dakota State Medical Association
711 North Lake Avenue
Sioux Falls, South Dakota
Dear Mr. Erickson:

Here is the Insurance Report on the Group Plans for the years 1964 - 1965 - 1966. We have not collected all our premiums for 1966, so there might be a slight variation in the total gross premiums.

Dr. Stransky has on file the years 1957 through 1963, Insurance reports, when he was Insurance Chairman.

	Total Premiums	Loss Ratios
1964	\$28,699.74	63.7%
1965	\$31,332.20	25 %
1966	\$32,899.05	67.2%

The 1957 through 1963 average was 69.9% and the current average for 1964 through 1966, with an average of 51.7%.

These figures do not include money spent for Home Office expense, Agency Administration or reserves that are set up in the Company.

Although the total premium has not increased substantially the participation has increased to approximately 60%. The reason for the low premium and high participation is due to personal programming with the individual Doctor on elimination periods.

Thank you very much.

Sincerely,
Harold Diers & Company
by Bob Diers

RD/eg

NEW BUSINESS

Mr. Erickson discussed the Community Action Programs in connection with the Poverty Program. The executive office is to send each councilor a copy of the Pierre resolution regarding these programs for their information.

A discussion was held on the proposed compulsory generic drug legislation. It was recommended that the SDSMA reaffirm the AMA's stand on this matter and so inform the American Pharmaceutical Association.

Mr. Erickson discussed the usual and customary fee basis in connection with the ODMC program. Dr. Quinn recommended that as soon as negotiations on fees are called for, we stress usual and customary fees. It was recommended that we invite the ODMC representatives to come and discuss fees with the Executive Committee at the time of the next Council meeting. This action was moved by Dr. Hohm and seconded by Dr. Stransky. It passed unanimously.

Mr. Erickson read a letter regarding admitting patients to Yankton State Hospital only during office hours except in the case of an emergency. No action was taken.

A brief discussion was held on the Association's donation to the Science Fair. Dr. Bartron moved that we donate \$200.00. The motion was seconded by Dr. Hohm and passed unanimously.

It was decided that the next Council meeting be held at 11:00 a.m. on Sunday, April 2 in Sioux Falls with the Executive Committee and the ODMC officials meeting earlier that morning.

Dr. Perry moved the meeting be adjourned. The motion was seconded by Dr. Stransky and passed unanimously. The meeting adjourned at 4:00 p.m.



Togetherness....

...can be rough when epidemics of nausea and vomiting strike a family. Emetrol offers prompt, safe relief. It is free from toxicity¹ or side effects^{2,3} and will not mask symptoms of serious organic disorders.

1. Bradley, J. E., *et al.*: J. Pediat. 38:41 (Jan.) 1951.
2. Bradley, J. E.: Mod. Med. 20:71 (Oct. 15) 1952.
3. Crunden, A. B., Jr., and Davis, W. A.: Am. J. Obst. & Gynec. 65:311 (Feb.) 1953.



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The Mediatrix Age:

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McNeill, A. J.: Clin. Med. 8:518 (Mar.) 1961.

"Mediatrix (steroid-nutritional compound) capsules, one a day, seem to give definite help to debilitated patients."

Arnold, E. T., Jr.: Geriatrics 12:612 (Oct.) 1957.

"Nutritional and hormone bolstering of function in the aged may have a useful place in geriatrics."

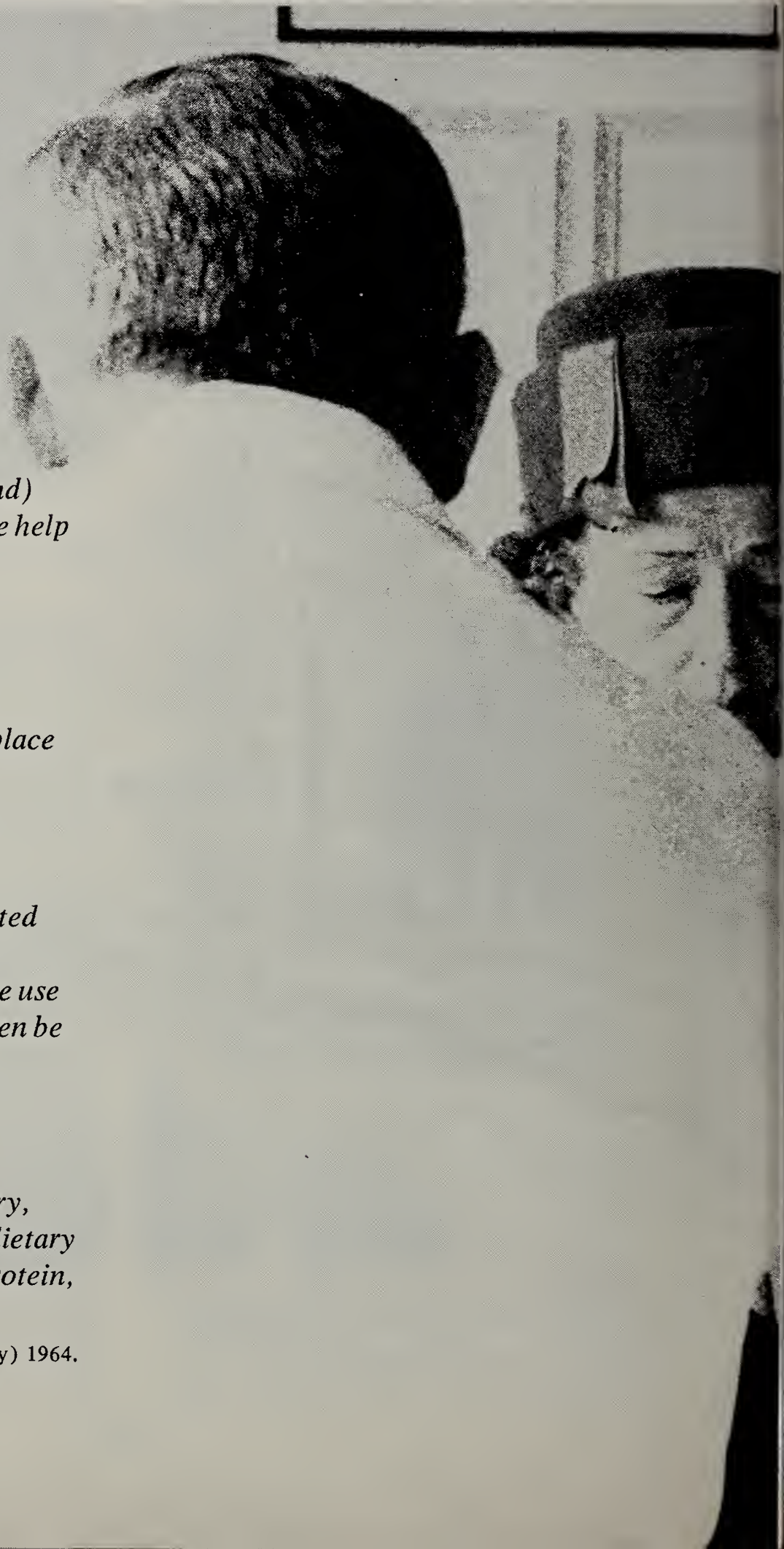
Morgan, A. F.: Gerontologist 2:77 (June) 1962.

"In diets which for any reason are restricted in calories, enough of these substances (B vitamins) may not be supplied... The use of B and C vitamin supplements may then be justified and indeed may be necessary."

Morgan, A. F.: Gerontologist 2:77 (June) 1962.

"Intensive nutritional therapy is necessary, especially in elderly people, to correct dietary deficiencies created by large losses of protein, vitamins and other nutrients."

Riccitelli, M. L.: J. Am. Geriatrics Soc. 12:489 (May) 1964.



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Nutritional reinforcement for those who can't
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Each 15 cc. (3 teaspoonfuls) contains:

*Conjugated estrogens—equine (Premarin®)	0.25 mg.
Methyltestosterone	2.5 mg.
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Cyanocobalamin	1.5 mcg.
Methamphetamine HCl	1.0 mg.

Contains 15% alcohol

MEDIATRIC Tablets and Capsules

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Methyltestosterone	2.5 mg.
Ascorbic acid	100.0 mg.
Cyanocobalamin	2.5 mcg.
Intrinsic factor concentrate	8.0 mg.
Thiamine mononitrate	10.0 mg.
Riboflavin	5.0 mg.
Niacinamide	50.0 mg.
Pyridoxine HCl	3.0 mg.
Calc. pantothenate	20.0 mg.
Ferrous sulfate exsic.	30.0 mg.
Methamphetamine HCl	1.0 mg.

*Orally active, water-soluble conjugated estrogens derived from pregnant mares' urine and standardized in terms of the weight of active, water-soluble estrogen content.

MEDIATRIC helps keep the older patient alert and active; helps relieve general malaise, easy fatigability, vague pains in the bones and joints, loss of appetite, and lack of interest usually associated with declining gonadal hormone secretion.

CONTRAINDICATION: Carcinoma of the prostate, due to methyltestosterone component.

WARNING: Some patients with pernicious anemia may not respond to treatment with the Tablets or Capsules, nor is cessation of response predictable. Periodic examinations and laboratory studies of pernicious anemia patients are essential and recommended.

SIDE EFFECTS: In addition to withdrawal bleeding, breast tenderness or hirsutism may occur.

SUGGESTED DOSAGES: *Male and female:* 3 teaspoonfuls of Liquid, 1 Tablet, or 1 Capsule, daily or as required.

In the female: To avoid continuous stimulation of breast and uterus, cyclic therapy is recommended (3 week regimen with 1 week rest period—Withdrawal bleeding may occur during this 1 week rest period).

In the male: A careful check should be made on the status of the prostate gland when therapy is given for protracted intervals.

SUPPLIED: No. 910 — MEDIATRIC Liquid, in bottles of 16 fluidounces and 1 gallon. No. 752 — MEDIATRIC Tablets, in bottles of 100 and 1,000. No. 252 — MEDIATRIC Capsules, in bottles of 30, 100, and 1,000.



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Path CAP sule

Submitted by the College of American Pathology in connection with the South Dakota Society of Pathologists.

BLOOD UREA NITROGEN AND NON-PROTEIN NITROGEN

It has been known for almost a century that the nitrogen concentration of a protein free filtrate of blood or plasma is related to renal function. The non-protein nitrogen (NPN) fraction consists of a heterogeneous mixture of substances of relatively small molecular size, which are not precipitated by certain protein precipitants such as tungstic acid. The chief constituents of NPN are urea, creatinine, creatine, uric acid, amino-acids, nucleotides, purines, polypeptides, glutathione, ammonia and other unidentified fractions². The amounts of these substances vary greatly between whole blood and plasma. Average normal NPN values for whole blood are usually between 20 mg.% and 40 mg.%²; serum values are about 5 mg.% lower.

Urea is the most important NPN constituent of blood. It is the chief end-product of protein metabolism and ordinarily is excreted entirely by the kidneys. In the normal individual the blood urea nitrogen (BUN) is less than half of the NPN concentration. Since many of the NPN components are not excretory substances, as is BUN, their concentrations do not rise with renal insufficiency. Therefore, it makes more sense to measure the one substance which makes up the greater portion of circulating non-protein nitrogenous material and which is directly related to renal excretory capacity, than it does to estimate the value of a heterogeneous group of variable nitrogenous substances. Hence the BUN is a much superior test to the NPN.

Urea is formed in mammals from ammonia in a complex cyclic pathway (the ornithine pathway). Arginine, one of the amino-acids produced in many tissues, is hydrolyzed by the liver enzyme, arginase, to urea and ornithine. It is thus apparent that urea production is a function of the liver.

Urea has no useful function in the body and in the process of excretion by the kidney the plasma is filtered by the glomerulus, and urea is excreted into the tubules where approximately 40% is again reabsorbed into the blood. The clinical importance of urea arises from the fact that an elevated concentration in the blood

stream may be associated with impaired renal function.

It must be remembered that the BUN concentration in the blood is determined by the balance between the rate of protein breakdown and the rate of elimination by the kidney. The body can utilize only a limited amount of protein for synthesis or storage; hence, on high caloric, high protein diets the excess is catabolized with increases in blood urea values and excretion of urea in the urine.

Addis has emphasized that the amount of protein in the diet has a profound influence on the serum level of urea in normal persons as well as those with kidney disease⁴.

Normal Range: The usually accepted normal values for BUN are 9-17 mg.%¹. This depends largely upon protein intake; age and sex have little influence although some authors have found somewhat higher values in males and older age groups³. The value in the normal individual depends chiefly upon the amount of protein ingested and catabolized.

Increased Values: Elevated BUN values occur in a number of pathological conditions. The cause may be increased production or decreased elimination, due to impaired kidney function, or a combination of the two processes. It is usually accepted that extensive renal disease must be present before increased BUN values (azotemia) occur. With a **constant protein intake** the degree of azotemia is a function of the extent and type of renal damage. However, an elevated value provides no clue to the location of the disease process; it can be glomerular, tubular or extrarenal in nature. Values of 20-25 mg.% should be viewed with suspicion but are not unequivocal indication of kidney dysfunction. In terminal chronic nephritis or severe acute nephritis values of 200-300 mg.% may occur. Increased values are sometimes found in the absence of renal involvement. This occurs for example when excessive amounts of protein are broken down as is seen in cases of stress, myocardial infarctions and gastrointestinal bleeding.

Decreased Values: There are a few conditions in which lowered BUN concentrations are found. These are caused by decreased production of urea and include: protein malnutrition caused by diminished intake or impaired absorption, pregnancy during its later stages, and in extensive liver damage.

Indications for the Test: Serum urea nitrogen should be determined whenever diminished

kidney function is suspected. It is a much more meaningful test than the NPN and closely parallels the creatinine determination in use and value. The latter test, however, is somewhat more specific. It should be borne in mind that in attempting to evaluate renal function, tests such as the urea or creatinine clearance offer more sensitive and quantitative information.

Material Needed for the Test: Serum (preferably fasting) 3 ml.

REFERENCES

1. Miller, **A Text Book of Clinical Pathology**, 6th Edition, p. 242.
2. Hoffman, **The Biochemistry of Clinical Medicine**, 2nd Edition, p. 268.
3. McKay, et. al., **J. Clin. Invest.**, 4:295, 1927.
4. Addis, et. al., **J. Clin. Invest.**, 26:869, 1947.

New Faculty (Continued from Page 69)

ty Hospital in San Antonio, Texas. Dr. Shimamura was assistant resident in Pathology at the Washington University School of Medicine in St. Louis and completed his residency at the Baylor University School of Medicine.

Dr. Shimamura's field of interest is kidney diseases and he has a number of publications concerning his recent work with experimental glomerulonephritis and pyelonephritis. His current research project deals with the role of autoimmune mechanisms in chronic renal diseases.

C. R. G.

GRANTS —

(Continued from Page 69)

search grants to Dr. Earl B. Scott for the continuation of his studies on the histopathology of amino acid deficiencies and an electron microscopic study of deficiency diseases and aging. The total amount awarded Dr. Scott was \$24,550 for the current year. Dr. Charles Gaush received a \$6000 grant from the South Dakota Division of the American Cancer Society for studies on the cytoplasmic membranes of mammalian cells. This amount included a new \$3000 graduate student fellowship in Microbiology.

C. R. G.

GENERAL PRACTITIONERS —

Lennox, South Dakota has exceptional opportunity available for either single practice or partnership arrangement. Lennox Clinic building available; financial, professional advantages; splendid surroundings in Southeastern South Dakota; large area to serve. Ideal for becoming established. Inquiries, visits welcome. Contact City Mayor Fred Courey, chairman, Medical Services Committee.

Two well-established general practitioners would like to help third physician interested in having his own practice. We desire close association without partnership.

Excellent chance to enjoy the benefits of solo practice as well as the advantages of association. No salary or other strings attached.

Potential — Overpowering! New practice can gross \$45,000 to \$55,000 within three years. Population of Sioux Falls 74,000 with large drawing area. One of the real beauty spots in the Midwest. Hunting and fishing year round within an hour's drive from the heart of town.

Sioux Falls is fortunate to have two general hospitals which can accommodate up to about 700 patients. There is also a Veterans' Hospital, in addition to a Crippled Children's Hospital.

Wonderful opportunity for the right man. If interested, please reply to:

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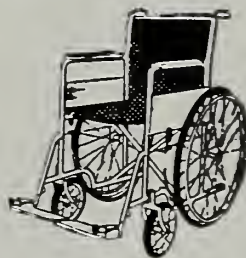
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to recover from
her hip fracture
if she just
doesn't care?**



**Does she really care?
Is she alert, encouraged,
positive and optimistic
about getting completely
well soon?**

**Or has she given in to
the demoralizing impact
of confinement, disability
and dependency?**

**When functional fatigue
complicates convalescence,
Alertonic can help...**

Pleasant-tasting Alertonic is pipradrol hydrochloride—an effective cerebral stimulant whose gentle analeptic action helps counteract the apathy and inertia that can often delay convalescence—together with an excellent vitamin and mineral formula, in a satisfying 15% alcohol vehicle.

Nothing fosters confidence and a sense of well-being better than your own personal warmth, understanding and encouragement together with Alertonic to help insure prompt response.

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*And for your patient's sake, prescribe Alertonic
in the convenient, economical one-pint bottle.*

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Available Only On Prescription

Each 45 cc. (3 tablespoonfuls) contains: alcohol, 15%; pipradrol hydrochloride, 2 mg.; thiamine hydrochloride (vitamin B₁) (10 MDR*), 10 mg.; riboflavin (vitamin B₂) (4 MDR), 5 mg.; pyridoxine hydrochloride (vitamin B₆), 1 mg.; niacinamide (5 MDR), 50 mg.; choline,† 100 mg.; inositol,† 100 mg.; calcium glycerophosphate, 100 mg. (supplies 2% MDR for calcium and for phosphorus) and 1 mg. each of the following: cobalt (as chloride), manganese (as sulfate), magnesium (as acetate), zinc (as acetate), and molybdenum (as ammonium molybdate).

*Multiple of adult Minimum Daily Requirement supplied.

†The need for these substances in human nutrition has not been established.

Indications: 1. Functional fatigue such as that often associated with: a depressing life experience or stressful time of life; advancing years; convalescence; limited activity or confinement. 2. Poor appetite and vitamin-mineral deficiency as they occur in: patients having faulty eating habits; geriatric patients who are losing interest in food; patients convalescing from debilitating illness or surgery.

Dosage: Adults, 1 tablespoonful; children (over 15 years old), 1 to 2 teaspoonfuls; children (4 to 15 years old), 1 teaspoonful. To be taken three times daily 30 minutes before meals.

Contraindications: As with other drugs with CNS stimulating action, Alertonic is contraindicated in hyperactive, agitated or severely anxious patients and in chorea or obsessive compulsive states.

Side effects: Reports of overstimulation have been rare. Patients who are known to be unduly sensitive to the effects of stimulant drugs should be observed carefully in the initial stages of treatment.

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HUNTERS, SHOOTERS, GUN COLLECTORS — TAKE NOTE!!!

There is now in operation nationally a well organized and financed campaign to discredit the fraternity of gun owners and users, and those who deal in firearms, branding them as socially irresponsible, deviates, and misfits. Much of the present furor was precipitated by the unfortunate incident wherein a maladjusted individual assassinated the President of the United States. Other circumstances involving the abuse of firearms by psychopaths and by careless individuals recently have added fuel to the conflagration and directed public awareness to the misuse of guns. Some of the abuse of guns has resulted directly from the sensationalism given by the press of this country to homicide with firearms. Unfortunately, some of the more outspoken nationally syndicated feature writers have presented their appeal to the emotional aspects of the problem, overlooking the concerted efforts of the Izaak Walton League, the National Rifle Association, the Boy Scouts, and others to teach gun safety and to promote the careful use of firearms. All of this has focused attention on the subject of gun ownership and use in the United States.

In the past year articles critical of guns and their owners have been printed in several periodicals, including Reader's Digest. In the November 14, 1966, issue of Medical Economics there appeared on pages 250-291 the condensation of an article by Carl Barth, entitled "The Right to Bear Arms." It was most critical of the National Rifle Association and those who in any way use or handle guns. Because the thought content of this M.E. article was highly controversial and slanted against the gun owner, it was re-

quested of the Editor of the M.E. by the undersigned, that a rebuttal to the Barth article be printed in the Letters to the Editor column. This was not allowed.

Hunting and shooting is one of the largest sports in South Dakota. The economy of this state for many years has been geared to the influx of pheasant hunters in the fall. Many physicians and persons from other walks of life came to South Dakota originally or returned here after an absence for education, military service, or other adventure, primarily because of their love of the out of doors and the excellent hunting which this state offers to its residents. Many young men now away from South Dakota for various reasons look forward to their return so that they can again enjoy the sporting facilities available here. If the hunting and shooting facilities here are removed or stringently tied by law, making the use of firearms prohibitive, as some might desire, a great incentive to come or return to this state would be removed.

At the present time a South Dakota citizen can purchase without difficulty a rifle or shotgun with which to hunt, target shoot, or to protect his property from predators. Although there is no legal age limit upon the purchase of such a gun, the gun dealers usually will not sell a gun to anyone under 18 years. If he desires to purchase a pistol, the state law specifies that he be over 18 years of age or be accompanied by his parent or guardian, signify his intent to purchase at the dealer of his choice, and then sign in triplicate a statement of intent to purchase. He must then wait for two days before taking possession of the weapon. One copy of the purchase request goes immediately to the local police, one to the state of South Dakota, and the

other is retained by the gun dealer. In the event that the purchaser of a handgun is bent upon homicide, the two day wait usually makes dramatic changes in his plans. This arrangement in regard to the purchase of firearms has existed in this state for some time and has not led to wholesale manslaughter with firearms. A person who uses a pistol is required by law to have a permit to carry the pistol, upon his person, while he is carrying the pistol. This law serves as a protective measure for the community as a whole, but does not enact an undue hardship upon the true, dedicated sportsman who likes to shoot, but who desires to comply with the law of the land.

In a recent bulletin of the Metropolitan Life Insurance Company it was noted that in males 15-24 years of age firearms ranked third as the cause of accidental deaths (4.5 deaths/100,000 at 15-19 years; 3.2/100,000 ages 20-24 years). In females firearms accidents resulted in 0.4/100,000 deaths in the same interval. Although the 15-19 year old males comprise less than 5% of the population, their gun accidents accounted for about 16% of the mortality resulting from the accidental discharge of guns. This would suggest that greater emphasis on gun safety is definitely indicated. In the ten year interval 1952-53 to 1962-63 there was a decrease in the age adjusted death rate from gun accidents.

If rigid, mandatory regulation of all guns is to be avoided, it would appear that the hunters, shooters, and gun owners are going to have to police their own ranks. Education regarding gun safety and accident prevention, hunter safety courses for all youths before they are allowed to hunt or use firearms, and then constant surveillance of these youngsters by parent or guardian for a long time, will help decrease the unfortunate effects of careless gun handling.

It is a foregone conclusion that some means of preventing homicide with a destructive weapon is highly desirable. The Sullivan gun law in New York, designed for this purpose, and the gun laws in other states have not prevented persons with criminal intent from obtaining and using firearms or from committing murder with other weapons. These laws have made it difficult for the private citizen who likes to shoot, needs a weapon for the protection of his property, or likes to collect guns, to obtain firearms.

It is also apparent that there is needed some form of regulation of the interstate sale of firearms through the mail, to deter those who would stockpile weapons for pseudopatriotic organizations, to help prevent those who

have lengthy criminal records or records as criminally insane, from obtaining firearms. This is especially true of easily concealable weapons such as pistols. The regulation of sale and use of rifles, shotguns, and other weapons which are not easily concealed can be handled effectively on a state or local basis.

The hunters, shooters and gun collectors of this state are going to have to concern themselves with this subject; help educate the public regarding gun safety; participate in the activities of hunter safety courses, community gun clubs, Izaak Walton League and other similar organizations; make their thoughts and recommendations known to their local and state officials, and Congressmen and Senators, if their right to own, keep, and bear arms is to remain unfettered by emotionally inspired, cumbersome gun control laws.

J. B. Gregg, M.D.
Sioux Falls.

MEDICAL MOTION PICTURES, COLOR TV TO AGAIN BE FEATURES AT AMA ANNUAL CONVENTION

Medical motion pictures and color television will be a feature of the Annual Convention of the American Medical Association again this year.

The Convention is to be held in Atlantic City June 18-22, the Scientific Program at Convention Hall and nearby hotels and the House of Delegates at the Chalfonte-Haddon Hall Hotel.

Medical motion pictures have become an integral part of the Annual Convention program. Movies are carefully screened and selected for quality, content and diversity of subject matter. Some are chosen from the AMA library of medical motion pictures while others are picked from among films just completed. Several new films are usually shown for the first time at the Annual Convention. The total movie program is thus planned to achieve both variety and currency.

Medical motion pictures will be presented daily. At least five color television programs will be presented live, on a closed circuit from a Philadelphia hospital in cooperation with the University of Pennsylvania School of Medicine.

Several of the Scientific Sections will participate in this year's color television program.

The entire Scientific Program for the 1967 Annual Convention will be published in the May 8 issue of the Journal of the American Medical Association.

Letter to Editor—

February 7, 1967

South Dakota Medical Association
 711 North Lake Avenue
 Sioux Falls, South Dakota 57104
 Dear Sirs:

I want to express our very deep gratitude to your fine organization for the generous gift provided for the three Science Fairs held in South Dakota. The gift has been shared in equal amounts with the University of South Dakota and the School of Mines.

I am sure you realize that there are certain expenditures in connection with the Science Fair that cannot be sustained with state funds and therefore, we must depend upon the interest and generosity of organizations such as yours. It is reassuring to find that the interest in the Science Fair grows each year and we have more entrants and the quality improves. We are certain that the opportunity provided by the Science Fair stimulates interest in the individual participants and has a stimulating effect on the science program of the participating schools. This interest becomes evident in the community and has a broad impact.

You are part of a good team working for a good cause and we are grateful to you.

Sincerely yours,
 David F. Pearson
 Assistant to the President
 South Dakota State University
 Brookings, South Dakota

CHILDREN'S MEMORIAL HOSPITAL SEMINAR

Omaha, Nebraska

DISORDERS OF GROWING BONE

May 12-13, 1967

Victor McKusick, M.D.

Professor of Medicine

Johns Hopkins School of Medicine

David Smith, M.D.

Associate Professor of Pediatrics

University of Washington School of Medicine

DIABETES BOOK DOING DOUBLE DUTY

The latest book published for diabetics is **Diabetes for Diabetics**, by a practicing diabetologist, George F. Schmitt, M.D.

Doctor Schmitt clearly explains the cause and treatment of diabetes, as well as its complications and problems, in simple terms which laymen can understand.

A large section on diet, including the most complete food exchange lists ever published, contains information on purchase, preparation and selection of foods.

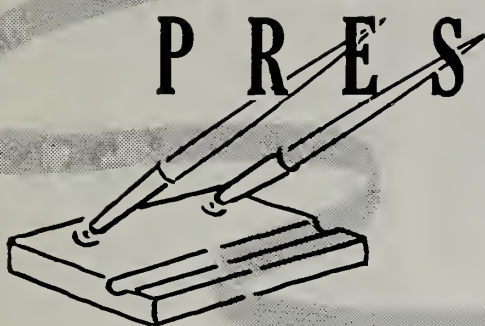
Many problems of daily living such as marriage, pregnancy, employment and insurance are discussed. In addition, there are over two hundred colored photographs.

The book is available at \$5.95 prepaid from the Diabetes Press of America, Inc., 30 S.E. 8th Street, Miami, Florida 33131. Profits derived from the sale of this book will be placed in a fund primarily to send underprivileged diabetic children to camp.



"FROM ALL INDICATIONS, I'D
 SAY YOU'RE FRIGID."

P R E S I D E N T ' S P A G E



Almost all of the Poverty programs require some direction from the medical profession. These programs include Head Start, Community Action, and others.

Money is being given to communities, some of it requiring matching by service or community group agencies and individuals.

It is the policy of the Medical Association to hold to the principle of usual and customary fees in any of these programs and I would urge you to hold to this. I feel that we must take part in some of these programs, particularly in advisory capacities, in order that the medical programs will have the proper professional direction.

Preston Brogdon, President
South Dakota State Medical Association
212-220 Realty Bldg.
Mitchell, So. Dak.

This is your **MEDICAL ASSOCIATION**

News Notes • Changes • Births • News

Pop's Proverb

The brilliant light of medical knowledge becomes but a feeble flicker when it does not produce a cure.

The February 18, 1967, issue of **LIFE** carried a most interesting article on Symmetrel, Du Pont's virus blocking drug.

We feel fortunate to have brought this drug to the attention of South Dakota physicians by means of advertising in the January, February, and March issues of this Journal.

* * *

R. J. Bareis, M.D., Rapid City, recently attended a regional conference of the American Society of Internal Medicine in New Orleans, Louisiana.

Leaders of the society discussed all aspects of federal health legislation.

* * *

New president of the Lemmon Chamber of Commerce is **C. A. Johnson, M.D.** He was named to the post at the organizational meeting of that body held recently.

* * *

K. M. Illig, M.D., Pierre, recently landed his single engine plane safely on a highway in Florida.

Dr. Illig put the plane down on U.S. 10 in the Gainesville area after the engine failed. With him were his wife and teen-aged daughter.

Announcement is made of the American Cancer Society's 1967 Scientific Session to be held May 3, 1967 at the Sheraton-Dallas Hotel, Dallas, Texas. No preregistration is required, and there is no registration fee.

* * *

A former Eagle Butte girl has joined the staff of Temple University in Philadelphia. **Jo Ann Haberman, M.D.**, earned her degree in medicine from the University of South Dakota and Temple University.

She is now an assistant professor at Temple and works primarily on cancer research.

* * *

Chris J. Moller, M.D., received the "Distinguished Service" award presented by the Dell Rapids Jaycees.

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SOUTH DAKOTA
MEDICAL SCHOOL
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FUND
IS NEEDED**

R. H. Hayes, M.D., Winner, was honored recently by the Winner Indian Council for his past services to the Indian people and for his recent service in Viet Nam. Doctor Hayes was given the honorary Indian name of "Good Lance" and was presented with a peace pipe.

Since his return from Viet Nam, Doctor Hayes has addressed many groups, showing slides and describing his experiences in that country.

* * *

A public forum on Mental Retardation was held in February in Omaha, Nebraska.

Spokesmen for programs in South Dakota were Dr. Henry V. Cobb, Chairman of the Department of Psychiatry, the University of South Dakota; and Thomas Scheinost, Mental Retardation Planning, State Department of Health.

* * *

The new officers for the Sixth District Medical Society are as follows:

President

F. D. Gillis, M.D.

Mitchell

Vice President

J. T. Berry, M.D.

Mitchell

Secretary-Treasurer

R. G. Gere, M.D.

Mitchell

* * *

Ted Angelos, M.D., was recently elected president of the Canton Rotary Club. He will take office in June.

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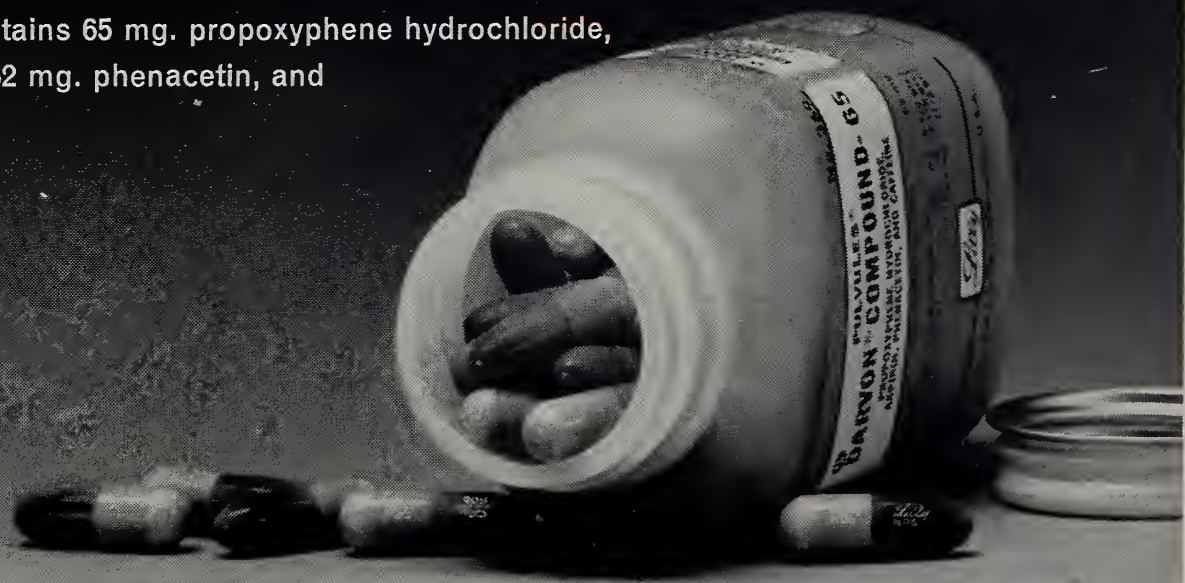


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ANNUAL MEETING — SOUTH DAKOTA STATE MEDICAL ASSOCIATION
RAPID CITY, SOUTH DAKOTA JUNE 3, 4, 5, & 6, 1967

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THE SOUTH DAKOTA
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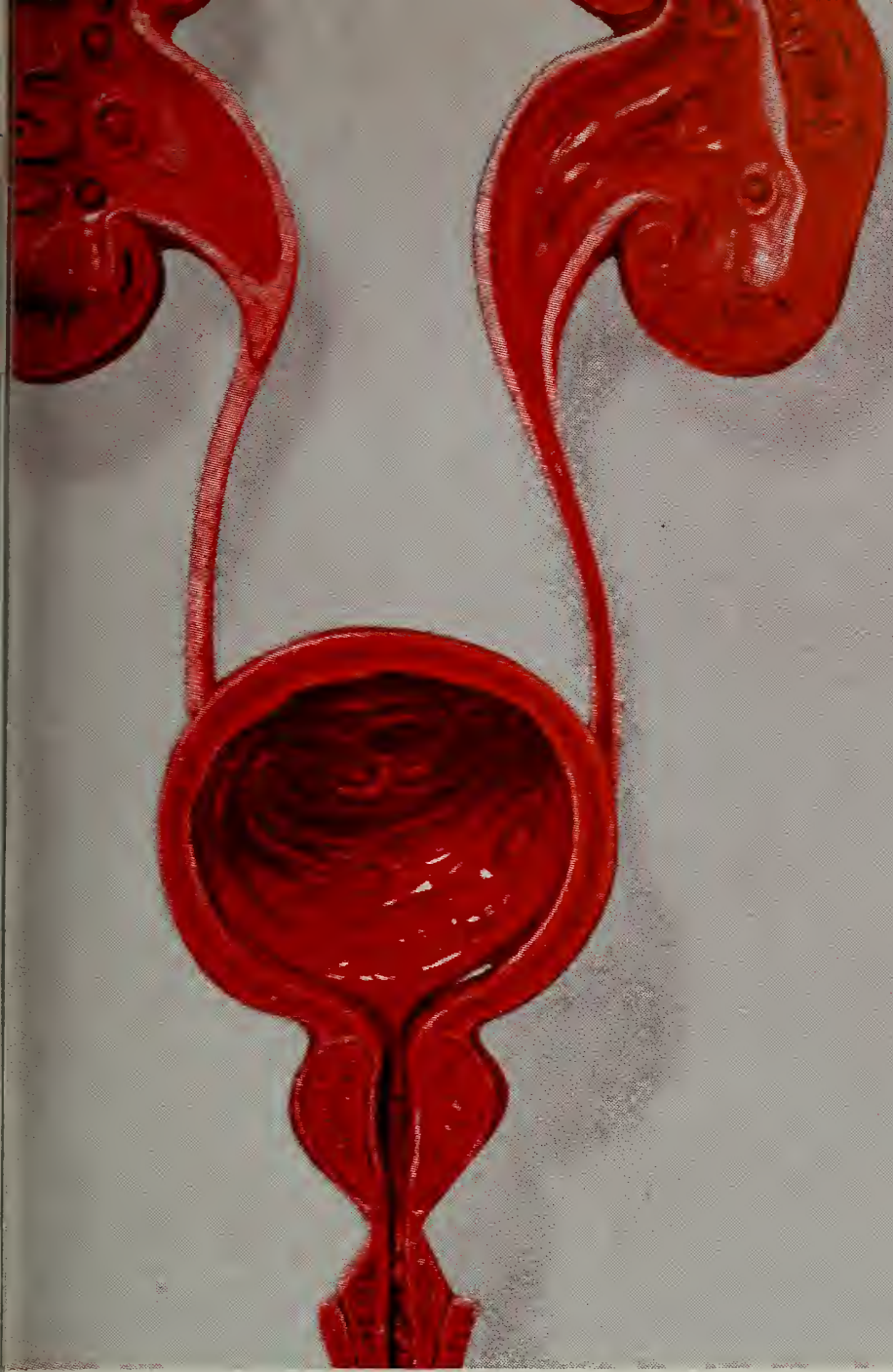
Number 5

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THE DIAGNOSIS AND TREATMENT OF RABIES

Charles R. Gaush, Ph.D.
George W. Knabe, Jr., M.D.
School of Medicine
University of South Dakota
Vermillion, S. D. 57069

Rabies is an acute viral infection of the central nervous system in humans. Although the number of human infections has decreased from 47 in 1938 to 1 in 1965, the threat of infection is always present due to the prevalence of the disease in neighboring states (Fig. 1). It can be seen that many cases of rabies occur in nearly all states to the south and east of South Dakota and Nebraska, being particularly numerous in Iowa and Illinois. In South Dakota, rabies infections are most prevalent in skunks (697 cases), cattle (333 cases), cats (194 cases) and dogs (136 cases) as reported by the State University at Brookings for the years 1949 to 1964 inclusive (7). The physician is often called upon to treat wounds and bites caused by animals suspected of having rabies. His prompt and knowledgeable attention to these cases will insure the continuation of the low incidence of this disease in humans. The purpose of this paper is to review the nature of the virus and of human and animal infections, the treatment of infections and the submission of specimens to diagnostic laboratories.

THE VIRUS.

Rabies virus is an elongated rod-shaped particle with a diameter of 100 m μ and a length of about 250 m μ (1). It has a filamentous internal component with a diameter of 100 Angstroms (8) which is surrounded by a membrane containing small projections. With respect to structure, this virus is very similar to that of vesicular stomatitis, but there is no evidence of any serological relationship to this or any other viruses. It is an RNA-containing virus (5) and finger-like projections have been seen budding from the surface of infected cells as the virus emerges (1).

THE HUMAN DISEASE. (4, 10)

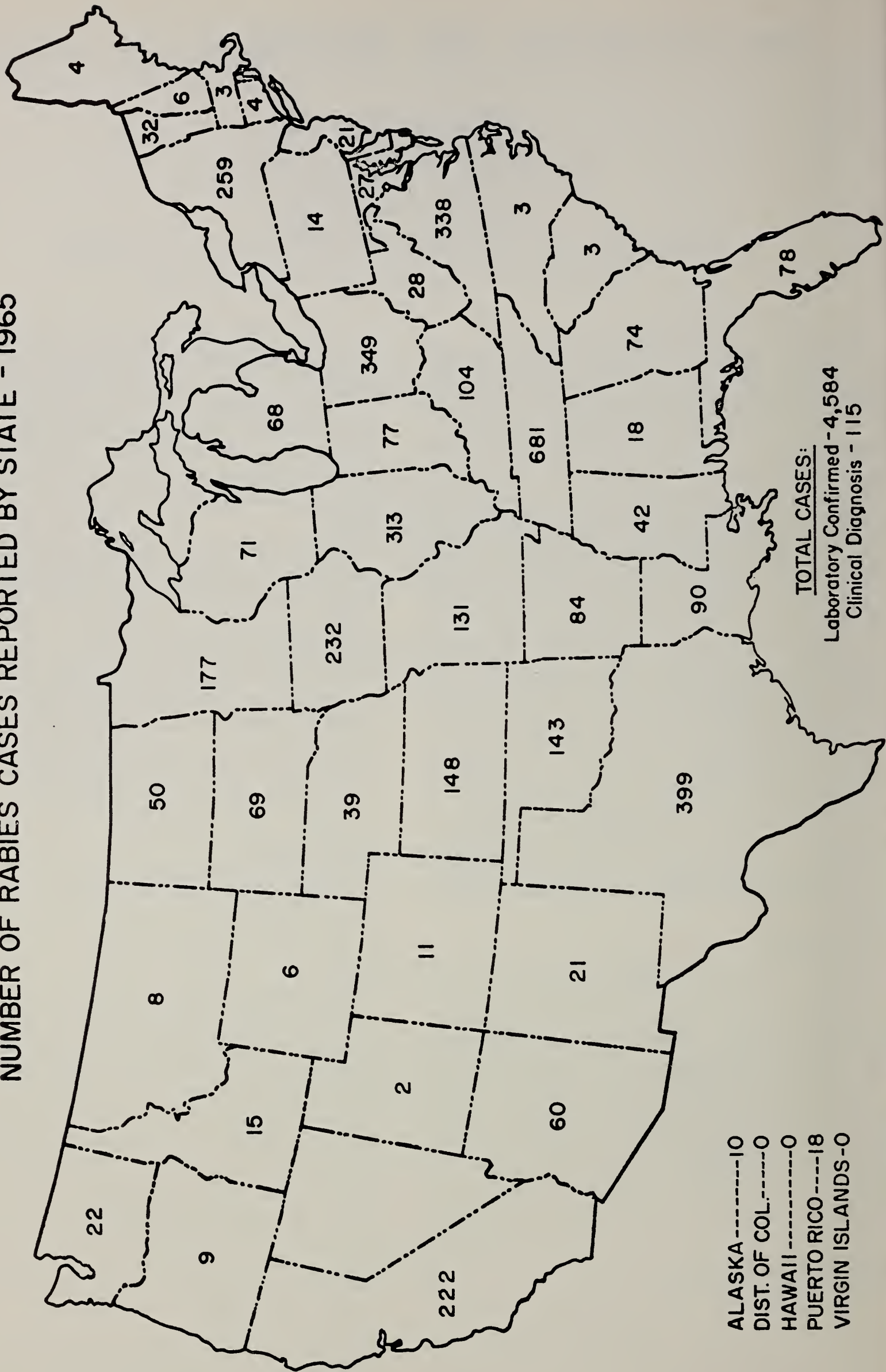
It is thought that the virus invades the nervous system soon after exposure, passing from the site of infection to the CNS by way of the

peripheral nerves or perineural lymphatics. The incubation period is usually from one to three months, although it may be as short as 8 days and as long as 8 months, depending on the infecting dose and the site of exposure. The incidence of rabies in unvaccinated individuals bitten by rabid animals varies from 5 to 70 per cent.

Clinical illness is heralded by 2 to 4 days of prodromal symptoms such as headache, malaise, nausea and vomiting, sore throat and fever. The earliest symptom of diagnostic significance is an abnormal sensation at the site of infection. This occurs in 80% of cases and is manifest by a tingling or paresthesia, often with a dull or stabbing pain which radiates proximally or distally. The wound may be inflamed and excoriated usually by the patient's scratching. The patient is then likely to demonstrate increasing agitation with restlessness, nervousness, anxiety and apprehension. He is sensitive to bright lights and to noise. Spasmodic muscle contractions and convulsions may occur, and there are usually disturbances of the autonomic nervous system. The principal clinical symptom is the inability to swallow fluids caused by painful contractions of the pharyngeal muscles. The respiratory system may also be involved in these spasms, producing apnea with gasping and cyanosis in severe cases. This, associated with a generalized convulsion, is a common manner of death. Depressive and paralytic symptoms occur if the patient survives the excitement stage, although they may be interspersed with the acute stage. Death then usually follows in 2 to 3 days but may be delayed for several weeks. Once the clinical symptoms develop there are no specific treatments other than those for temporary symptomatic relief. Mortality at this stage of the disease is virtually 100%. Past experience has shown that vaccines are usually not effective if the incubation period is short.

FIG. 1. The number of rabies cases reported by state in 1965. From the "Annual Rabies Summary," Communicable Disease Center, USPHS, Atlanta, Georgia.

NUMBER OF RABIES CASES REPORTED BY STATE - 1965



THE ANIMAL DISEASE.

Rabies is usually transmitted to humans by domestic animals and to some extent by wild animals. In the animal an encephalitis is produced which increases its tendency to bite, thus perpetuating the disease. The incubation period in dogs may be as short as 10 days but is usually 20-60 days and depends on the amount of infecting virus. During the prodromal stage most animals become nervous and apprehensive, although some may become apathetic and die without any disease symptoms. The onset of disease is indicated by a desire to attack and bite but hydrophobia does **not** occur in canine rabies. Paralysis of the muscles of phonation occurs in most infected animals and is indicated by a change in their bark or growl. As the disease progresses the animal will probably show muscular tremors, incoordination, convulsions, paralysis, coma and death (4).

Dogs or other animals that appear nervous or apprehensive and attack or bite anyone should be captured (if possible), isolated and observed for 10-14 days. If the animal is rabid, the above symptoms will develop within this period and death will usually occur within 3-5 days. If wild animals are suspect, they may have to be killed but the brain should not be damaged in the process. The head of the animal should be shipped on wet ice to a regional laboratory for examination and confirmation of the disease.

Prevention of the disease in dogs is best accomplished by immunization with the Flury LEP vaccine which is effective for three years. This type of immunization is required by most municipal statutes as a requisite for licensing.

LABORATORY DIAGNOSIS.

In the laboratory, several techniques are available to establish a diagnosis from the animal specimens submitted. One of the best is the fluorescent antibody test. Microscopic examination of the brain tissue for Negri bodies and isolation of the virus from tissue specimens with confirmatory neutralization tests provide additional evidence.

The complexity and difficulty of establishing diagnosis by these procedures necessitates that they be performed in laboratories routinely handling rabies specimens. In some cases where the specimen has undergone decomposition due to delay in shipment it may be necessary to resort to histologic study by procedures customarily employed in pathologists' laboratories. Therefore, tissue unsuitable for the customary immediate diagnostic procedures may yield information by histologic examination. If consul-

tation with the laboratory indicates that the specimen is unsuitable it should be placed in 10% formalin, making certain that the formalin is allowed to permeate through the entire brain by making suitable non-deforming incisions. It can then be referred to a local pathologist who can examine it for evidence of encephalitis and inclusion bodies. In some cases it may be desirable to examine other organs from a suspected animal since some other disease may be found to be the cause of the animal's behavior.

TREATMENT OF PERSONS EXPOSED TO RABIES.

In treating persons exposed to rabid animals, local treatment of wounds has been employed for a number of years. In view of several animal experiments (2), this is a very effective method for preventing the disease. The first consideration by the patient in the treatment of animal bites is the **immediate** washing and flushing of the wound. Water alone may suffice but soap or detergents are preferred since the virus is rather susceptible to these agents. In an experiment with guinea pigs (2) only 5% of the animals died if the wounds were washed whereas 90% of the controls died. Further treatment of wounds by the physician would include washing with a 1 or 2% aqueous Zephiran® solution, or a 20% soap solution. Topical application of antirabies serum is also useful as is the use of antibiotics or antitetanus procedures. Thorough cleansing, topical treatment with antiserum and injection of antiserum under and around the wound is the treatment of choice in severe bites; in addition, a full course of rabies vaccine should be given. The vaccine used should always be of the inactivated type such as the Semple vaccine or the duck embryo vaccine. The Semple vaccine virus has been inactivated by heat while the duck embryo vaccine virus has been inactivated by beta-propiolactone. Live virus vaccine such as the Flury HEP chick embryo vaccine is not indicated in the treatment of persons exposed to the natural virus. This type of vaccine is suggested for the immunization of those who work with or are exposed to rabies virus in their work.

In cases of severe bites it is desirable to administer both the anti-rabies serum and the vaccine. The passive immunization by the antiserum provides short term protection by neutralizing the infecting virus while the vaccine elicits the formation of additional antibody. Since the antiserum administered will also neutralize some of the vaccine virus, maximum

antibody titers are often not observed until the 21st day. In these situations it is recommended that a booster be given 10 and 20 days after the last inoculation of the standard series. Habel (3) and Koprowski (6) found that in animal experiments the use of antiserum and vaccine is much more effective than either antiserum or vaccine alone.

In case of exposure to rabies by any means, it is the responsibility of the physician to determine the type and duration of treatment as this will depend on the circumstances involved. Since these are quite variable, a standard procedure is not feasible and the recommendations of the WHO Expert Committee on Rabies (11) are the best guide. These procedures are listed in Tables I and II.

SHIPMENT OF SPECIMENS.

It is very important that animals suspected of having rabies be captured and confined for observation if at all possible. If the animal is rabid, death will usually occur in a few days. The head should be removed and submitted to a laboratory for examination. The following regional laboratories are equipped for the diagnosis of rabies in South Dakota:

1. Specimens from west of the Missouri River:

Division of Laboratories
State Department of Health
Pierre, South Dakota 57501

Questions concerning specimens should be directed to Mr. Ben E. Diamond, Director of the above laboratory, who can be reached at CA4-5911, extension 368 or 369; after hours call CA4-7863.

2. Specimens from east of the Missouri River:

Department of Veterinary Sciences
South Dakota State University
Brookings, South Dakota 57006

Dr. G. S. Harshfield, Director, can be reached at 692-6111, extension 372 to answer any procedural questions.

There has been some confusion regarding the shipment of fresh specimens and in order to clarify matters two important factors should be kept in mind:

1. Avoid deterioration of the specimen.
2. Avoid the possibility of infecting others who may handle the specimen enroute.

TABLE I

Local Treatment of Wounds Involving Possible Exposure to Rabies

(1) Recommended in all exposures

(a) First-aid treatment

Immediate washing and flushing with soap and water, detergent or water alone (recommended procedure in all bite wounds including those unrelated to possible exposure to rabies).

(b) Treatment by or under direction of a physician

- (i) Adequate cleansing of the wound.
- (ii) Thorough treatment with 20% soap solution and/or the application of a quaternary ammonium compound or other substance of proven lethal effect on the rabies virus.¹
- (iii) Topical application of antirabies serum or its liquid or powdered globulin preparation (optional).
- (iv) Administration, where indicated, of antitetanus procedures and of antibiotics and drugs to control infections other than rabies.
- (v) Suturing of wound not advised.

(2) Additional local treatment for severe exposures only

- (a) Topical application of antirabies serum or its liquid or powdered globulin preparation.
- (b) Infiltration of antirabies serum around the wound.

¹ Where soap has been used to clean wounds, all traces of it should be removed before the application of quaternary ammonium compounds because soap neutralizes the activity of such compounds.

Zephiran, in a 1% concentration, has been demonstrated to be effective in the local treatment of wounds in guinea pigs infected with rabies virus. It should be noted that at this concentration quaternary ammonium compounds may exert a deleterious effect on tissues.

Compounds that have been demonstrated to have a specific lethal effect on rabies virus in vitro (different assay systems in mice) include the following:

Quaternary Ammonium Compounds

0.1% (1:1000) Zephiran	1.0% (1:100) Phemerol
0.1% (1:1000) Cetylamine	1.0% (1:100) SKF 11831
1.0% (1:100) Hyamine 2389	1.0% (1:100) Diaparene

Other substances

43—70% ethanol; tincture of thiomersal; tincture of iodine and up to 0.01% (1:10,000) aqueous solutions of iodine; 1% to 2% soap solutions.

TABLE II
Specific Systemic Treatment

Nature of exposure	Status of biting animal (irrespective of whether vaccinated or not)		Recommended treatment of Patient
	At time of exposure	During observation period of ten days	
I. No lesions; indirect contact	Rabid	—	None
II. Licks:			
(1) unabraded skin	Rabid	—	None
(2) abraded skin, scratches and unabraded or abraded mucosa	(a) healthy	Clinical signs of rabies or proven rabid (laboratory)	Start vaccine ¹ at first signs of rabies in the biting animal
	(b) signs suggestive of rabies	Healthy	Start vaccine ¹ immediately; stop treatment if animal is normal on fifth day after exposure
	(c) rabid, escaped, killed or unknown	—	Start vaccine ¹ immediately
III. Bites:			
(1) mild exposure	(a) healthy	Clinical signs of rabies or proven rabid (laboratory)	Start vaccine 1,2 at first signs of rabies in the biting animal
	(b) signs suggestive of rabies	Healthy	Start vaccine ¹ immediately; stop treatment if animal is normal on fifth day after exposure
	(c) rabid, escaped, killed or unknown	—	Start vaccine ^{1,2} immediately
	(d) wild (wolf, jackal, fox, bat, etc.)	—	Serum ² immediately, followed by a course of vaccine ¹
(2) severe exposure (multiple, or face, head, finger or neck bites)	(a) healthy	Clinical signs of rabies or proven rabid (laboratory)	Serum ² immediately; start vaccine ¹ at first sign of rabies in the biting animal
	(b) signs suggestive of rabies	Healthy	Serum ² immediately, followed by vaccine; vaccine may be stopped if animal is normal on fifth day after exposure
	(c) rabid, escaped, killed or unknown	—	Serum ² immediately, followed by vaccine ¹
	(d) wild (wolf, jackal, pariah dog, fox, bat, etc.)		

¹ Practice varies concerning the volume of vaccine per dose and the number of doses recommended in a given situation. In general, the equivalent of at least 2 ml of a 5% tissue emulsion should be given subcutaneously daily for 14 consecutive days. Many laboratories use 20 to 30 doses in severe exposures. To ensure the production and maintenance of high levels of serum-neutralizing antibodies, booster doses should be given at 10 days and at 20 or more days following the last daily dose of vaccine in all cases. This is especially important if anti-rabies serum has been used, in order to overcome the interference effect.

² In all severe exposures and in all cases of unprovoked wild animal bites, antirabies serum or its globulin fractions together with vaccine should be employed. This is considered by the Committee as the best specific treatment available for the post-exposure prophylaxis of rabies in man. Although experience indicates that vaccine alone is sufficient for mild exposures, there is no doubt that here also the combined serum-vaccine treatment will give the best protection. However, both the serum and the vaccine can cause deleterious reactions. Moreover, the combined therapy is more expensive; its use in mild exposures is therefore considered optional. As with vaccine alone, it is important to start combined serum and vaccine treatment as early as possible after exposure, but serum should still be used no matter what the time interval. Serum should be given in a single dose (40 IU per kg of body weight) and the first dose of vaccine inoculated at the same time. Sensitivity to the serum must be determined before its administration.

In order to avoid deterioration, the specimen should be packed in wet ice using 5 times the volume of the specimen during the hot summer months.*Dry ice is not recommended because time is wasted waiting for the brain to thaw and freezing disrupts tissue architecture which makes histological examination difficult. It should be sent to the laboratory with dispatch using the most rapid means of transportation available. If possible the specimen should be delivered in person if the driving distance is within 2-4 hours. The State Highway Patrol, Game Wardens or other state officials may be available to transport the specimens. They are sometimes sent by bus and it is also permissible to mail the specimen if it is properly packaged. The post office only prohibits the mailing of live animals suspected of or having rabies (9). Proper packaging for mailing is necessary to prevent deterioration and also to avoid the possibility of infecting postal employees and contaminating mail. Postal authorities state that the **sender** is liable for any damage due to improperly packaged specimens (9).

If the specimen is small enough it may be placed in a wide-mouth jar which is then sealed with some type of water-proof tape. The jar should be placed in a can with a tight closure (such as a lard can) containing wet ice and sawdust, vermiculite or some other insulator. This material should be wet with a disinfectant or soap solution so it can serve as both insulation and a trap should the specimen container leak. The can should also be sealed with water-proof tape. The can should then be placed in a sturdy cardboard box containing more insulation or absorbent material to soak up the water that will condense on the side of the can. This is important since the post office may not accept or send a package that is leaking or wet. Physicians may find it desirable to keep a suitable container and packing materials on hand in case of sudden need. A prominent label should be attached to the box with the words: "RUSH-RABIES SUSPECT." If the specimen is large, it may be sealed in a double plastic bag instead of being placed in a glass jar. These procedures apply to specimens sent by parcel post, bus or railway express. The most important factors are that the specimen must be shipped in a double-sealed container enclosed within a sturdy box and it must be kept on ice. The presently available laboratory methods can not be

*Cans of refrigerant such as used for camping are convenient.

used with confidence if the specimen has deteriorated.

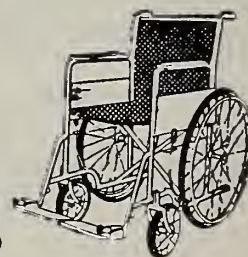
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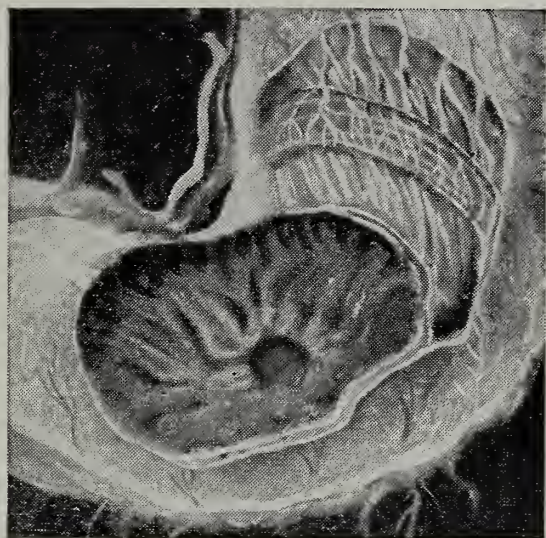
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MATERNAL DEATH DURING THE PUERPERIUM FROM ACUTE CARDIAC FAILURE WITHOUT A HISTORY OF HEART DISEASE

By

C. A. Stern, M.D.

Sioux Falls, South Dakota

The author wishes to express his appreciation to William D. Johnson, Director, Division of Public Health Statistics, South Dakota State Department of Health; Madonna Clark, R.R.L., McKennan Hospital, and Harriet Smith, R.R.L., Sioux Valley Hospital.

The dramatic reduction in all of the leading causes of maternal mortality is one of the great medical accomplishments of this century. With this decrease in the number of maternal deaths, there has been a shift or realignment in the relative importance of the etiological factors involved. Deaths from cardiac disease, although showing a decline numerically, have not shown the same proportionate drop when compared to the other causes of maternal mortality. If "direct" obstetrical deaths such as those from hemorrhage and toxemia are eliminated, then fatalities from cardiac disease will rank as one of the number one "killers" of the puerperial patient.

In the decade 1955 to 1965 deaths from all cardiac causes, including embolic and thrombotic vascular disease, were second only to hemorrhage as the leading factor in maternal deaths in the State of South Dakota. "Direct" cardiac disease with right or left heart failure accounted for one half (10) of these deaths; however an interesting finding was that in about 40% of the deaths due to heart failure there was no known previous history of cardiac disease and no diagnosis of heart disease was made except as a terminal event.

The clinical picture of these patients is remarkably similar; the sudden appearance in an elderly multipara of acute progressive cardiac failure usually of the right heart with death occurring in the puerperium despite adequate medical treatment. There is no known history of cardiac, renal or hepatic disease and most patients, as far as known, had a normal prepartum

course. There appears in most cases a few clinical or symptomatic warnings of prognostic importance. These are: (1) a history of progressive fatigue, (2) a history of a U.R.I. with a non-productive cough, (3) tachypnea or dyspnea which is progressive, and (4) tachycardia which is consistent and present at rest. These symptoms and signs are, of course, those which may be found in early cardiac failure in any patient, but in the multipara and during the puerperium they have an ominous significance. A short case history of two of these patients is given below to illustrate the sequence of events in the clinical history:

CASE NUMBER ONE:

This 39 year old gravida 4 para 3 was admitted to Sioux Valley Hospital 6/2/60 from a nearby community hospital. The diagnosis by her physician was "pneumonitis." The prepartum and past history was not significant except for a complaint of fatigue for an undetermined period, and recurrent episodes of cystitis. One day prior to admission she was stated to have developed a temperature of 102 F. and a W.B.C. of 17,000. At this time the patient was complaining of a non-productive cough and moderate dyspnea.

The patient was seen at 3:30 A. M. by the medical resident, who reported that she appeared somewhat dyspneic and cyanotic but in no acute distress and had negative physical findings including examination of the chest.

At 9:00 A. M. the patient's condition became critical with the development of an acute pulmonary edema. The liver was palpable two fingers below the costal margin and the chest was filled with moist rales. The abdomen was the size of a term pregnancy with the fetus in an OLA position. Fetal heart tones were good

and in the normal range. The temperature was 100.8, the pulse 120 to 140 and the blood pressure 150/70. Shortly after intensive treatment was started for acute right failure by the medical consultant, the patient ruptured her membranes spontaneously, and went into a precipitate labor. A viable term infant was delivered with low forceps under local anesthesia with the patient in a semi-sitting position and receiving continuous O₂ by mask. The cord was not clamped so that about 400cc of blood was lost. Her clinical condition appeared to improve the first two hours postpartum with considerable resolution of the moist rales in the chest. Soon, however, pulmonary edema again became evident with a marked sustained tachycardia. Another phlebotomy for a total of 825 cc of blood, adrenal steroids, positive pressure oxygenation, and digitalization produced no change in the patient's condition and she went into cardio-vascular collapse. The blood pressure was in the range of 60 to 90 systolic and the pulse was never less than 150. At 6:00 P.M. the patient became comatose and expired three hours later. Autopsy was obtained. Aside from pulmonary edema, there was no additional anatomical diagnosis.

CASE NUMBER TWO:

This 38 year old gravida 4 para 2 was admitted to McKennan Hospital from a nearby rural community on 10/5/60. Fetal death had occurred in late July and an attempt at induction in August had failed. The patient had four previous term deliveries at this hospital. There was no history of cardiac disease, but her physician recalled an "hypotensive episode" immediately following her past two labors. There was also a history of delayed postpartum hemorrhage.

On admission the patient's vital signs were: Respiration 20, T. 99.6, Pulse 84 and Blood Pressure 110/70. Dilation of the cervix was about 4 cm. The attending physician ruptured membranes and, on the advice of a consultant, a slow I.V. pitocin solution was started. The following day there was little progress and scalp traction on the fetal head was instituted. That evening the patient developed a lower uterine constriction ring at about 6 to 7 cm of cervical dilation with the head high in the pelvis. On advice of a second consultant, a version and extraction was done under deep ether anesthesia without difficulty. During the anesthetic recovery period, the patient developed a shock-like picture with the blood pressure falling to 90 systolic and then to 70/50 and her pulse increased from 90 to 130.

She was given 1000cc of whole blood. A medical consultant was called who began treatment for acute heart failure with vasomotor collapse.

Despite transitory improvements in the patient's blood pressure, a sinus tachycardia of 150 continued and the patient expired in acute pulmonary edema eight hours following delivery. Autopsy was obtained with the findings compatible with an acute cor pulmonale and a tissue diagnosis of an isolated interstitial myocarditis.

DISCUSSION

There appears to be a group of pregnant women who, during the last trimester or early postpartum period, develop a fatal acute cardiac disease which arises *de novo* inasmuch as there is no known previous history of cardiac insufficiency. All the cases reported occurred in patients who were "old" from an obstetrical standpoint, who were multiparous, and who had in common no history of obstetrical complications or cardiovascular disease in the past. Once acute failure developed, the outcome was uniformly fatal despite the most vigorous medical treatment.

Despite the similarity of the clinical picture there is no evidence that these deaths represent a common etiological agent; only in the last case was a postmortem diagnosis of a specific entity, that of myocarditis, made. But even here the internists have conflicting views on what constitutes a non-specific myocarditis, and the literature on myocarditis in pregnancy is confusing. A description of this syndrome under the names of "isolated myocarditis," Fiedler's myocarditis, and "postpartal heart disease" reveals some cases almost identical to the two cases described above.

Acute myocardial infarction, pericarditis, and multiple pulmonary emboli are a few of the other common cardiac diseases which may terminate in an acute right heart failure during the puerperial period. In the cases reviewed above there was not sufficient good clinical or postmortem evidence on which to base these diagnostic possibilities.

Summary

The relative increase in the number of deaths from cardiac disease in the puerperium should alert the obstetrician to look for early significant signs and symptoms in these patients despite the lack of a history of previous insufficiency.

(Continued on Page 30)

DEATH FROM RABIES IN A TEN YEAR OLD BOY

(One of two cases in United States
in 1966.)

G. Robert Bell, M.D.
De Smet, South Dakota

When his folks gave this patient a sleeping bag for his tenth birthday, little did they know that it would indirectly lead to his death. Four days later he slept in a tent in a neighbor's back yard, in the town of Bryant, South Dakota. In the early morning hours of August 3rd he was awakened by a bite on the thigh. A skunk had apparently crawled into the sleeping bag and bitten him. In an attempt to get away the boy was bitten severely on both hands, fingers, the right wrist, neck, ear and abdomen. There were only single bites on the ear, neck, abdomen and thigh, but approximately fifteen to twenty bites on the wrist, hands, and fingers of both hands. Several had penetrated the nails and practically transversed the fingers in several places. The bites on the wrist penetrated the tendons, sheaths and several of the veins, causing considerable subcutaneous hemorrhage.

The animal was finally beaten off with a baseball bat. An hour later, what was thought to be the same animal was found several blocks away. It was shot and the head taken to the Veterinary Department at South Dakota State University at Brookings. A positive diagnosis of rabies was made on direct smear, by finding negri bodies in the brain of the skunk.¹

INITIAL TREATMENT.

In the meantime, the local physician cleansed the wounds with phisohex and water and painted them with tincture of merthiolate. A booster tetanus toxoid was given also.

The patient was then taken to the closest hospital, and seen by the author approximately four hours after the attack. Considerable swelling was present about the wrists, and pain was present from subungual hematoma. High doses of antibiotics were administered and a splint applied to the right wrist. Rabies antiserum and vaccine were ordered immediately. According to the Expert Committee on Rabies, World Health Organization², serum should be administered in a single dose not less than 40 units per kg. of body weight, followed by a full course of not less than 14 vaccinations. Supplemental doses

may be given at ten and twenty days after completing the series.

According to his weight of eighty pounds, 2000 units of antirabies vaccine was administered. Approximately one-half was infiltrated into the tissue surrounding the bites and the other half injected intramuscularly. This was given within fourteen hours of the bites. One hour later the first Duck Embryo Vaccine was administered, subcutaneously, in the abdominal wall. Because of previous allergic manifestation and need of mild sedation the boy was given Benedryl, 50 mgm q.i.d.

The hospital course was uneventful and the patient was dismissed on the fifth day after exposure. All wounds healed well and the boy was seen daily for sixteen more days, receiving a total of twenty-one shots of Duck Embryo Vaccine with nothing more than the usual local redness and swelling.

PRODROMAL SYMPTOMS.

On August 27th, the 25th day after exposure and four days after the last vaccine injection the boy was seen as an out-patient, complaining of fever, headache and stiff neck. The mother then mentioned that he had remarked several times during the past week about his right arm going to sleep and then waking up.

Physical examination on admission revealed only hyperactive reflexes of extremities and abdomen, and definite muscle rigidity of the neck. The hospital course was a gradual worsening of conditions. On the evening of admission he had a temperature of 101°, was irritable and jumpy with a poor sleeping pattern. The next day brought fever of 102°, severe headache, blurring of vision, twitching of nose, increased jumpiness and hyperactive reflexes. On the 27th post-exposure day a spinal tap was performed with some elevated pressure and increase in lymphocytes. There was more arm numbness and a temperature of 104° which ASA wouldn't control. Indocin was used with good success.

During the night and early morning of the

28th day he developed hallucinations, wandered into the hall, jumped straight up in bed, and slept very little. The mental confusion was considerable, but he could be talked into reality by his mother. He frequently lapsed into a semicoma. On the 29th day, after another bout of 105° temperature, Indocin was again successfully used. The patient drank with difficulty, aroused enough to complain of stiffness of arms and legs, and mentioned that his throat hurt. The face and lips were swollen and excessive amounts of saliva and mucous collected in his throat.

A neurologist was called. He suggested calling the Eli Lilly Research Department, which was done. They felt it sounded like rabies, but if it were a vaccine reaction, then ACTH would be of some help and still not suppress the immunological response from the vaccine. Eighty units of ACTH was given, as well as intravenous fluids with no appreciable change.

TERMINAL STATE.

During the night and into the early morning of the 30th day the patient developed hives and did not respond to any stimuli. The extremities became flaccid; respiration stopped while still having a good pulse. A tracheotomy was performed and IPPB was used from then until his death. The patient was transferred ninety miles by ambulance with IPPB, to the intensive care unit of Sioux Valley Hospital.

The coma continued until death on September 5, thirty-four days after the attack, and only thirteen days after the last dose of vaccine.

Because of the unusual nature of the case, extensive studies were performed after the boy's death. Cooperating in this very complete study were Drs. Keith Sikes and Bob Warren of the Rabies Control Unit, Veterinary Public Health Unit, Atlanta, Ga.; Ben Diamond, Director of State Laboratories at Pierre; Dr. Harshfield of the Veterinary Science Department at SDSU, Brookings, and James A. Rud, M.D., Pathologist at Sioux Valley Hospital.

BLOOD AND TISSUE REPORTS.

On autopsy, tissues were submitted to State Health and Communicable Disease Center Laboratories for microscopic and virus isolation. Impression smears from brain, lungs and salivary glands were negative on direct fluorescent microscopic examination. Mice inoculated with the brain suspension died of rabies within ten to fourteen days after intracerebral inoculations. The mouse brains were positive by fluorescent antibody tests. No virus was isolated from the salivary glands or lungs of the boy. When blood

was taken in the terminal stages, rabies serum neutralizing antibody was present with a titer greater than 1:50. It was the impression of the Chief of the Rabies Control Unit, Dr. Sikes, that, "The vaccine apparently successfully produces the humeral antibodies, but the overwhelming dose of virus was too great for the treatment to be effective."³

It has been the desire of all those involved with this case to emphasize the importance of rabies today. According to information made available through a publication of the U. S. Dept. of Health, Education and Welfare⁴ we have had only one human rabies death a year in the United States during the past three years. However, since 1958 there were 23 deaths, three have been in South Dakota. All were children and all were bitten by skunks. At this writing there have been two deaths this year in the United States, the other was in Colorado.

EPIDEMIOLOGY

Rabid skunks have been a problem in South Dakota since 1951. We had no skunks presented for testing in 1950 although we had diagnosed seven cases in other animals. Rabies was moving into North and South Dakota from Iowa and Minnesota in 1950. Then in 1951 we accumulated a total of fifty-six positive skunks. Every year since 1951 skunks have led the list of the different species in which rabies were found. Table I⁵ is a compilation of information from South Dakota records and from U. S. Public Health records. It shows skunks have been at the top of the list every year, and in all years except 1965 they accounted for more cases of rabies than all other animals added together. From Table II⁴ we can see that the dog has been decreasing in incidence (undoubtedly because of vaccination) but that bats, skunks and foxes are increasing. Considering the fact that rabid skunks have the highest viral content in their saliva of any animal, it is not surprising that skunks are thought to be the primary reservoir of rabies because the transmission is so deadly.

In the U. S. in 1965, 71% of the total rabies cases were in wild animals. Skunks and foxes accounted for 57% of all reported cases. Bats, surprisingly, accounted for 10%. These figures are primarily because of our large fox, skunk and potential raccoon population. Some have suggested that rabies is cyclic but according to the Rabies Unit of Public Health⁴ "on a national basis there has been no observable cyclic phenowave. Instead skunk rabies has increased almost every year."

Something more than present controls will have to be used. States can be partially responsible but the main control must be regional programs by the Fish & Wildlife Service. Several programs have been studied for Appalachia and New England regions, and it would appear one is needed now for the Midwest.

Summary

A case history of death from rabies in a ten year old boy has been presented. Reports from tissue studies and blood tests were given, including comments from Chief of Rabies Control Unit, Atlanta, Georgia. Tables are shown which give the relationship of skunk rabies in South Dakota to that of other animals and the national statistics for the same. Comments were made that in spite of an increasing incidence of rabies there are no definite programs of control at this time or planned in the future.

TABLE I.
LABORATORY DIAGNOSED RABIES
VETERINARY DEPT. S.D.S.U.

Species	1960	1961	1962	1963	1964	1965	1966*
Skunks	43	70	56	55	52	29	43
Cattle	16	23	29	25	16	19	12
Dogs	5	5	8	11	4	2	3
Cats	3	7	16	15	6	14	3
Others	6	2	5	2	1	5	4

(*9 months)

Information obtained from the Veterinary Dept. at South Dakota State University.⁵

TABLE II.
INCIDENCE OF RABIES IN U. S.
BY TYPE OF ANIMAL

Year	Dogs	Cats	Farm Animals	Foxes	Skunks	Bats	Other Animals	Man
1953	5,688	538	1,118	1,033	319	8	119	14
1955	2,657	343	924	1,223	580	14	98	5
1957	1,758	382	714	1,021	775	31	115	6
1959	1,119	292	751	920	789	80	126	6
1961	594	217	482	614	1,254	186	120	3
1963	573	217	531	622	1,462	303	224	1
1965	412	289	625	1,038	1,582	484	153	1

Information obtained from U. S. Dept. of Health, Education and Welfare.⁴

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MATERNAL DEATH

(Continued from Page 27)

A history of progressive fatigue, dyspnea, non-productive cough, and tachycardia occurring in an elderly multipara should be enough evidence to demand immediate attention of the attending physician in order to rule out the possibility of early cardiac failure. Once established, cardiac failure in these cases proceeded to death despite adequate medical treatment.

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what time is it?

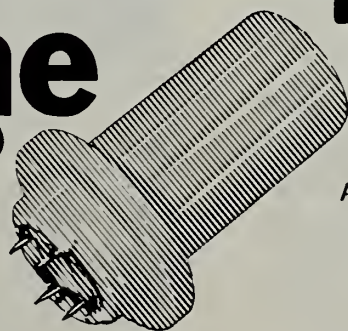
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CLINICOPATHOLOGICAL CONFERENCE - SIOUX VALLEY HOSPITAL

From the Intern and Resident Teaching Conferences of the Sioux Valley Hospital, Sioux Falls

John F. Barlow, M.D.*

Pathologist-Editor



Bernard J. Begley, M.D., F.A.C.S.**

Urologist-Discusser

This 63-year old Caucasian female developed pain in the right upper abdominal area 10 days prior to admission. The pain was dull, aching, and nonradiating. She was admitted to another hospital. She had lost some strength lately but had not noticed change in urine color, frequency, urgency or change in bowel habits. The remainder of the history was unremarkable.

Physical examination revealed a pale lady with pulse rate of 84, blood pressure 158/88, respirations of 20, and temperature 101°. The only positive physical finding was a large, slightly tender moveable mass in the right flank which could also be felt in the right upper quadrant. The examiner felt the mass was renal. Flat films of the abdomen showed a soft tissue mass in the renal region with a radiolucent center. Intravenous pyelogram showed a mass in the lower pole of the right kidney. The mass had a large radiolucent center and was 12 x 14 cm. No calcifications were seen. The kidneys functioned normally. The chest and colon were normal by x-ray.

The urinalysis revealed straw-colored urine with specific gravity of 1.017, pH 6.0, no glucose, protein, or hemoglobin. The sediment showed 0-2 wbc/hpf and an occasional RBC. Admitting hemoglobin was 8.9 gm%, red count 2,820,000 1mm^3 , hematocrit 28%, mean corpuscular hemoglobin 32 micro micrograms, mean corpuscular volume 100 cubic micra and mean corpuscular hemoglobin concentration 32%. The white count was 10,700 1mm^3 with 74% polys, 3% bands, 3% eosinophils, 18% lymphocytes, 2% monocytes. The red cells were normochromic and normocytic. The platelets were adequate. Erythrocyte sedimentation rate was 108 mm/hr. Blood urea nitrogen was 15 mg%. she was transfused with two units of blood and an operation was performed on the third hospital day.

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CLINICAL DISCUSSION

Dr. Bernard J. Begley: In summary, the patient is a 63-year old lady with noncolicky abdominal pain, an abdominal mass of short duration, fever, and an intravenous pyelogram revealing a mass in the lower pole of the right kidney with the unusual finding of a radiolucent center. Positive laboratory findings include anemia of rather marked degree and marked elevation of the erythrocyte sedimentation rate. May we see the x-rays?

Dr. Donald H. Breit*: There is no abnormality of the heart or lungs on the chest film. There is no evidence of rib metastases. Next are flat films of the abdomen in which you can see a good-sized mass with a rather large radiolucent area (fig. I). This radiolucency can be due to

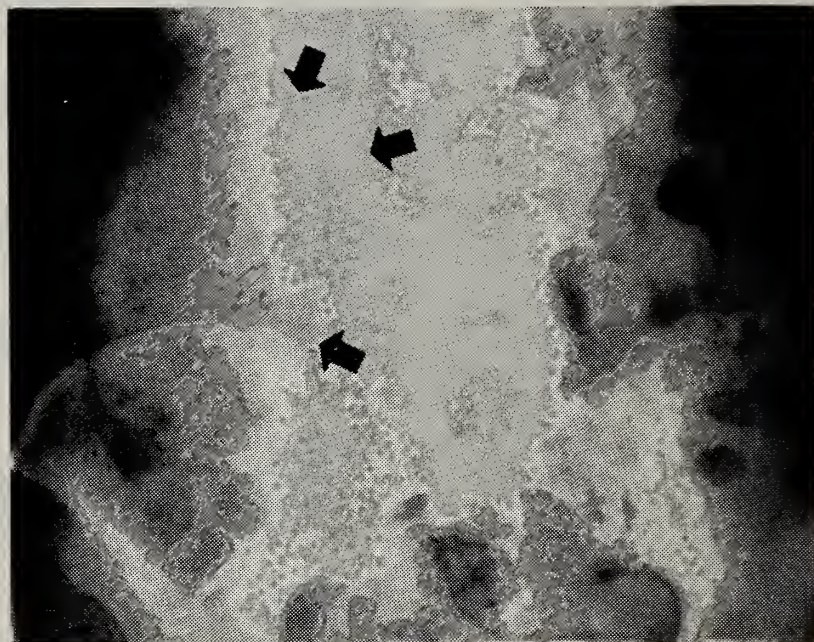


Fig. I - Note radiolucent mass with radioopaque periphery.

only two things, air or fat tissue. From the flat film one wonders if this might not represent a dilated segment of colon filled with air. This is probably why a barium enema was done. The colon is nicely outlined and the mass is clearly above it. This means that the next step was an intravenous pyelogram. You can see now that the mass takes origin from the kidney and forms

* Radiologist - Sioux Valley Hospital

a large ovoid tumor with a radiolucent center. The nonepithelial tumors of the kidney come from connective tissue, adipose tissue, muscle, blood vessels or lymphatics. This particular tumor appears to be a fatty tumor of some type. Hamartoma is a term that has been used in the literature for such a tumor. Of course, we radiologists cannot differentiate between liposarcoma and benign lipomatous tumor. The tumor caused sudden pain in the right upper quadrant. Hamartomas may call attention to themselves when pain is produced secondary to hemorrhage or infarction.

Dr. Begley: I was impressed on the x-rays that there are two components to the tumor. I see an outer rim of opaque tissue and a radiolucent center which is accentuated because of the outer rim. Many renal hamartomas or angiomyolipomas are mixed tumors and we may be seeing the separate tissue components on the x-ray.

Whenever the clinician encounters a renal mass, three separate types should be considered: the neoplastic renal mass, benign and malignant; the inflammatory renal mass which is certainly the most common one; and the cystic renal mass which is quite common. The inflammatory renal mass would be a good one for the pathologist to present if this were going to be written up in the State Journal. I believe I can exclude a parasitic cystic mass since there is no history of the patient being out of the country and the history is of short duration. A cyst of the kidney would not generally produce this sedimentation rate elevation unless it is an adenocarcinoma with cystic degeneration or a cystadenocarcinoma. We are left with the solid masses of the kidney. Certainly there is something of much less density in the main core of the mass. We must consider the connective tissue tumors—the lipomas and angiomyolipomas or the so-called hamartomas which generally have associated new blood vessel formation. Actually, they derive their name in part from their vascularity.

With many renal masses we have little or no correlative laboratory information but the anemia and elevated sedimentation rate here raise the suspicion that we are dealing with a condition not as benign as the symmetry of the mass and the fat would lead us to believe. In general, most renal masses require exploration—there are only a few in which one can dare omit surgery. These are in elderly people when one feels strongly from the shape of the mass that it represents a renal cyst. If it is large enough and one is fortunate enough, he may be able to in-

sert a spinal needle into the cyst and aspirate clear fluid. He might then inject the mass with contrast media and demonstrate no extra filling defects within the cystic mass. After all this, he could probably safely temporize. Otherwise renal masses require surgical exploration.

The adenocarcinoma or so-called hypernephroma constitutes 95% of the solid tumors of the kidney. If one feels that he is going to encounter such a malignant tumor, I personally feel the only way one can satisfactorily ligate the pedicle without too much manipulation of the kidney is through the thoraco-abdominal approach popularized by Dr. Chute many years ago. The most common method is through a conventional flank approach. However, I think that with a large mass and the possibility of renal carcinoma the thoraco-abdominal approach allows the earliest ligation of the renal pedicle.

Dr. John F. Barlow: Are there other comments?

Dr. Barry Pitt-Hart*: How certain are you that this is a primary renal tumor and not a lower retroperitoneal tumor encroaching upon the kidney?

Dr. Begley: This type of distortion of the lower collecting system should not occur from a retroperitoneal tumor. If this were an extrarenal tumor in the retroperitoneum then the entire renal axis should be shifted. The lower calyx itself would definitely be affected and should be displaced along with the kidney rather than being independently distorted.

Dr. Dorence L. Ensberg:** Would a lateral film be of value here?

Dr. Begley: I don't think so. In a patient of this age I would be suspicious of malignancy from the films despite the radiolucency. The increased sedimentation rate with anemia and fever are almost pathognomonic of a malignant tumor of the kidney. If this lady had had a more prolonged course, one might consider a renal carbuncle forming a fistula into the second portion of the duodenum or ascending colon which lie in rather intimate contact with the right kidney. This has been reported a number of times.

Dr. Adrian Wolbrink*:** Could the mass be traumatic in origin?

Dr. Begley: There is certainly no history of trauma. This lady just developed a dull pain. I

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have made a point to look in some textbooks of urological radiology and was not able to find a case with this degree of radiolucency in a lipomatous tumor. I have seen hamartomas and angiomyolipomas with a fair amount of fat in them but not with this much radiolucency. I wonder if this is a rim of hemorrhage about the tumor accentuating the radiolucency.

These hamartomas are oddities and many do not have hemorrhage into them. The sedimentation rate is markedly elevated. This is one of the important criteria for carcinoma of the kidney. If it were normal you could be reasonably certain that the mass would not be a carcinoma and would probably be cystic. The sedimentation rate coupled with the fact that carcinoma of the kidney occurs in the fourth, fifth, and sixth decades strongly points to carcinoma.

Dr. Ensberg: Do you really feel that the patient bled into her tumor enough to lower her hemoglobin to 8.9 gms% or is there another mechanism for the anemia?

Dr. Begley: There are a number of blood disturbances with renal carcinoma. Generally speaking the anemia is usually on the basis of blood loss. There may be tremendous hemorrhage into a renal tumor. I have seen large renal cell carcinomas two-thirds replaced by hemorrhage.

It has also been estimated that 1-2% of renal tumors (I don't personally feel it is that high) have red cell hyperplasia or secondary polycythemia with hemoglobins of 17 or 17 grams %. This is caused by erythropoietin which is supposedly elaborated by the kidney tumor. However, the anemia in renal neoplasms is frequently due to hemorrhage either into the tumor or out through the urinary tract.

Dr. Ensberg: I feel in this case the amount of hemorrhage very well may not explain the anemia.

Dr. Begley: This lady may have been mildly anemic to start.

Dr. Barlow: Some patients with renal angiomyolipomas may even present in shock due to hemorrhage.

Dr. Ensberg: In this patient though, I feel there is not enough blood loss to explain such severe anemia. I am just trying to keep the discussion honest (laughter).

Dr. Duane L. Greenfield*: This lady had a massive perirenal hemorrhage. In fact, she herself first felt the mass shortly after she had the

pain. The size of the mass was undoubtedly in large part due to hemorrhage.

Dr. Begley: I also believe the pain was probably due to hemorrhage. I have seen tumors larger than this that the patient was not aware of until he had pain and a physical examination was performed. I think we find more small kidney tumors today with the increased use of intravenous pyelography. In some institutions 20-25% of renal tumors are "incidental" findings on x-rays done in a complete workup.

Dr. Bernard Begley's Diagnoses

1. Renal Angiomyolipoma (Hamartoma)
2. ? Renal Cell Carcinoma (Hypernephroma)

PATHOLOGICAL DISCUSSION

Dr. John Barlow: The surgical specimen was a hemorrhagic 772 gram mass measuring 19 x 12 x 9 cm. The major portion consisted of bright yellow adipose tissue with a rim of hemorrhage (Fig. 2). On microscopic section the tumor was

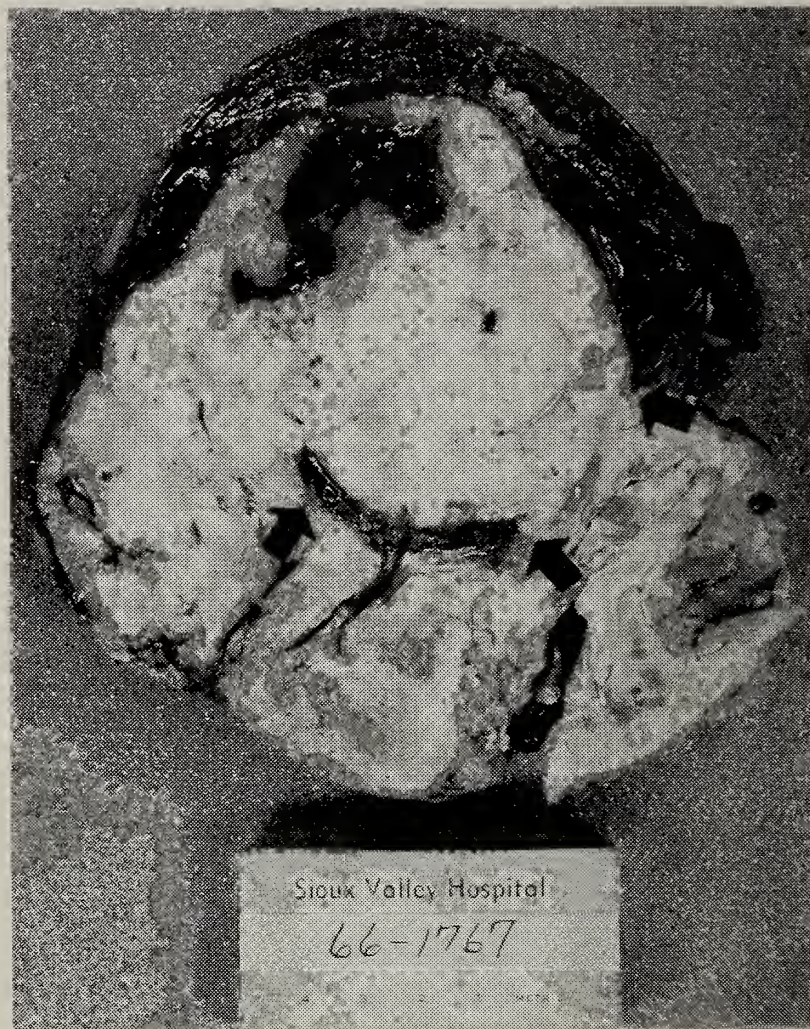


Fig. II

The kidney is at the lower portion of the picture. The tumor (corresponding to the X-ray shadow) is filled with fat and outlined by hemorrhage.

composed predominantly of adipose tissue with clusters of blood vessels and areas of spindle cells with slightly atypical, hyperchromatic nuclei. There was marked necrosis and hemorrhage around the tumor (Fig. 3). The latter explain the abdominal pain and anemia. The

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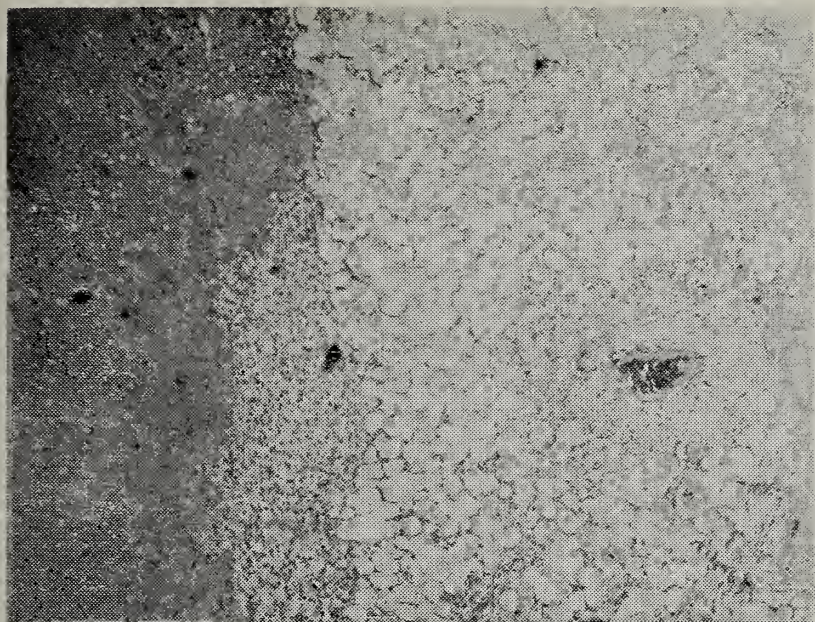


Fig. III. - Note adipose tissue, vessels and spindle cells representing components of angiomyolipoma on right and necrosis and hemorrhage on left.

mixture of elements histologically is diagnostic of an angiomyolipoma or renal hamartoma.

Angiomyolipomas are rare and frequently are seen in tuberous sclerosis. In this condition, the angiomyolipomas are often multiple and bilateral. However, large angiomyolipomas do occur in the absence of tuberous sclerosis.

Angiomyolipomas often present with pain or anemia secondary to hemorrhage or infarction within the tumor. An excellent review of these lesions was written by Price and Mostofi.¹ They reviewed 30 cases, 21 of which were females and 9 males showing a definite female predominance. The average age was 40 years but they ranged from 12 to 69 years.

The authors divided the patients into three groups according to their symptoms: Group I had sudden onset of pain or shock due to hemorrhage. There was usually a palpable mass. Group II had abdominal pain and hematuria with symptoms lasting from two weeks to ten years. Group III had fever and pain and indefinite symptoms.

Pathologically the lesions were composed of varying proportions of smooth muscle, blood vessels and adipose tissue. Hemorrhage and necrosis were frequent. The varying proportions of tissue explained a gross picture ranging from a solid tumor to a hemorrhagic or fatty mass. X-ray examination, as was shown in this case, may be very helpful. Important points brought out by the authors were that the smooth muscle component may show hyperchromatic cells which vary in size and shape. Also venous invasion may be seen. In spite of this the lesions are clinically benign. None of the 30 patients died from angiomyolipoma.

FINAL DIAGNOSIS

1. Angiomyolipoma with Hemorrhage and Necrosis.

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MINUTES OF THE COUNCIL MEETING

Sunday, April 2, 1967

Ramada Inn

11:00 a. m.

Sioux Falls, S. D.

The meeting was called to order at 11:00 a. m. by E. T. Lietzke, M.D., Chairman of the Council. Present for roll call were Drs. P. Preston Brogdon, J. J. Stransky, J. T. Elston, A. P. Reding, R. H. Quinn, E. J. Perry, James P. Steele, Paul Hohm, G. Robert Bartron, J. A. Muggly, A. J. Tieszen, Fred Leigh, Harvard Lewis, Clark Johnson, John Gregg, George Knabe and D. L. Scheller. Also present were R. H. Hayes, M.D. and Mr. Richard C. Erickson. Dr. Reding moved to dispense with the reading of the minutes inasmuch as they have been mailed to all Councilors. The motion was seconded and carried.

Dr. John B. Gregg reported on activities of the Commission on Medical Service.

REPORT OF THE COMMISSION ON MEDICAL SERVICE TO THE COUNCIL OF THE SOUTH DAKOTA STATE MEDICAL ASSOCIATION PREPARED FOR ITS MEETING APRIL 2, 1967

As of the date of preparation of this report there has been no formal meeting of this commission. There will be a meeting of the commission and the Medical School Endowment Committee at the Medical School in Vermillion on Saturday, March 18, 1967. However, this meeting will be too late for a report to be prepared for the Council meeting. If any important information is forthcoming from the Commission meeting, it will be reported verbally to the Council.

In the interval since the last Council meeting the following matters of business have been undertaken by this commission:

- (1) Traffic safety — No report.
- (2) Immunization - School Health — A letter has gone to each physician in the State of South Dakota relating to the availability of the Phillips Roxanne type measles vaccine now available through the Vaccination Aid Program at Pierre.
- (3) Rural Health — No new report. A meeting is to be attended in Chapel Hill, North Carolina, by Dr. J. A. Anderson of Madison in the very near future, on the subject of rural health. A report to the Council will be forthcoming when available.
- (4) Nurse training — A copy of the report concerning the meeting of the South Dakota Planning Council for Nursing Resources, attended by Dr. G. F. Tuohy is attached herewith.
- (5) Hospital Utilization - Insurance advisory — No report.
- (6) Medical School Affairs - Medical education — A meeting of the Third Annual Meeting of the Chairmen of State Medical Society Committee on Medical Education and Hospitals was attended by Doctors George Knabe and J. W. Donahoe. Their reports are attached herewith. The report of the meeting of the Medical School Affairs Committee in Vermillion as noted above will be reported later.
- (7) The First National Congress on the Socio-Economics of Health Care, held in Chicago January 22 and 23, 1967, was attended by J. B. Gregg, M.D. A report of this meeting is attached herewith. An editorial for the editorial page of the Journal of the South Dakota State Medical Association has been prepared and submitted directing the attention of the physicians in this state to the subject and inviting their perusal of this matter as reports appear in the J.A.M.A. and other periodicals.
- (8) The meetings of the Heart-Cancer-Stroke Planning Committee have been attended by J. B. Gregg, M.D. as a representative of the Commission on Medical Service. In the capacity of acting secretary for this planning group, minutes of the committee meetings have been compiled and are available to interested parties upon request.

Respectfully submitted,
John B. Gregg, M.D., Chairman

A REPORT ON THE MEETING OF THE SOUTH DAKOTA PLANNING COUNCIL FOR NURSING RESOURCES

A follow-up meeting was held on December 21,

1966 at the College of Nursing, South Dakota State University.

Miss Helen Foerest, U. S. Public Health Service, reported to the members of her activities the past several weeks in South Dakota. She has been gathering general data regarding care, private duty nursing, office nursing and other materials by personal interview around the state of South Dakota.

Information is still not readily available in this regard and employment incentives, utilization of nurses in rural hospitals and attrition rate in college nursing programs is yet to be investigated.

She will meet with the president of the Medical Assistants in Chicago on February 3, 1967 to get clarification of their role in the health field.

The South Dakota Hospital Association and other groups have offered to cooperate in securing information needed for the preliminary report. In the area of nursing education, an enrollment survey may be necessary as well as information on the cost of nursing educations to the student and to the school. Educational preparation of faculty and budgeted vacancies of faculty could be included in the survey.

Public Law 89-749 provides monies to states for comprehensive health planning. South Dakota has been appropriated \$25,000 for the fiscal year ending July 1967. The second appropriation will be \$50,000 July '67-'68. At this time no guide lines have been established for Public Law 89-749 and no action can be taken until these are published.

The name of Miss Evelyn Peterson was brought forward for director of the study project and she will be contacted in this regard. Sources of private funds were suggested and discussed. The chairman of this group will appoint a group to list organizations for financial sources and also to write Governor Boe to give him a progress report of this committee and advise him of the law and our need for financial support.

No date was set for the next meeting.

Respectfully submitted,
G. F. Tuohy, M.D.

REPORT OF THE THIRD ANNUAL MEETING OF CHAIRMEN OF STATE MEDICAL SOCIETY COMMITTEES ON MEDICAL EDUCATION AND HOSPITALS

Convened by the A.M.A. Council on Medical Education at the 63rd Annual Congress on Medical Education, Chicago, February 11, 1967.

Representatives of State medical societies, specialty boards and other groups concerned with medical education were present. W. Clarke Wescoe, M.D., Chairman of the Council on Medical Education, introduced the subject, the Millis Report, and indicated six areas for discussion: 1. the corporate responsibility for medical education, 2. the future of the internship as a separate year of training, 3. experiments in medical education, 4. the status of institutional accreditation, 5. the proposed new commission to supervise graduate medical education, and 6. the establishment of a new specialist, the "primary physician."

Most conceded the study was needed. However, a lack of spontaneous and prepared comment on the Report was interpreted by some as an indication that many considered present systems of supervision and improvement of medical education and practice to be operating satisfactorily. "What's the problem?" said one doctor. The Citizens' Commission on Graduate Medical Education apparently was unable to understand how the various facets of medical training were controlled inasmuch as undergraduate education is under supervision of medical schools, internships are under hospitals and residencies under specialty boards. Therefore, the Millis Report recommended a "Commission on Graduate Medical Education be established specifically for the purpose of planning, coordinating, and periodically reviewing standards for medical education and procedures for reviewing and approving the institutions in which

that education is offered." Most in attendance disagreed with the proposed composition of this superbody, feeling that established groups within medicine, such as the Council on Medical Education of the A.M.A., the Joint Commission on Accreditation of Hospitals, the Association of American Medical Colleges and the Advisory Board of Medical Specialties could better coordinate to serve this purpose.

The medical specialty boards were applauded as having made significant contributions to medical progress. The American Academy of General Practice indicated appreciation of their efforts and hopes there will be a new specialty with the creation of the "Family Physician," a new category of doctor different from the general practitioner of old.

The Millis Report's recommendation to abolish the internship and incorporate this into the medical curriculum was viewed with alarm. It was indicated that this would cause problems for the Boards and that they would probably oppose it. Some agreed that educational deficiencies of internship programs were often a result of hospital boards of trustees lacking the "corporate responsibility" to spend money on education.

It was noted that various recent reported studies have documented that a true public need has been demonstrated for family physicians. Medical school emphasis on the specialty approach has contributed to decline in medical student interest in this field. If organized medicine does not meet the need, legislative political action will determine how medicine will be taught and practiced.

George W. Knabe, Jr., M.D.
Acting Dean, School of Medicine

REPORT OF THE MEETINGS OF THE A.M.A. COUNCIL ON MEDICAL EDUCATION AT THE 63rd ANNUAL CONGRESS ON MEDICAL EDUCATION, CHICAGO, FEBRUARY, 1967

The Medical Education Committee meetings were so involved and contained so much revolutionary material that it would take much time to elaborate. In essence, the following points were covered in detail:

(1) Dr. Millis gave a 45 minute paper discussing in detail various facets of his original report which is available to all who are interested. It is suggested that this be read carefully. His family practice internship was discussed as was the marked and rapid changes that are taking place in the medical schools themselves, EG., gearing the fourth year toward the eventual field the budding M.D. will take (orthopedics, urology, etc.)

(2) Heart, stroke and cancer regional centers will do more to change the face of medicine than any other situation.

(3) The feeling that medical education beyond formal medical school education will be brought back to the medical schools and the community hospitals will play a secondary or helping role in this process. EG., The community hospital will probably be affiliated with a medical center or a four year school as the second year in a three year residency.

(4) Even state board examinations will have to change. The candidate's reasoning ability and judgement will have to in some way be tested. A re-examination schedule for all licensed physicians as in driver testing, CAA examinations, etc., may be in the future, EG., Some type of re-examination every five years.

From the two days of lectures and discussions I heard, I felt more and more that South Dakota must have a four year medical school. I further felt that many more physicians than now do so, **must** involve themselves in the medical education, administration and medical politics fields or we in South Dakota will be left behind and will be mere minor satellites to our neighboring states. (Sioux Falls is the largest city in a five state area and we need **not** assume a minor role.)

Respectfully submitted,
John W. Donahoe, M.D.

A REPORT OF THE FIRST NATIONAL CONGRESS ON THE SOCIO-ECONOMICS OF HEALTH CARE HELD IN CHICAGO JANUARY 22, 23, 1967

The South Dakota Medical Association was well represented at this meeting by Doctors P. Brogdon, R. Brown, R. Leander, A. Reding and J. Gregg.

This was a very interesting and informative meeting and one which the physicians of South Dakota are going to have to take interest in and note of insofar as the future development of medicine in this state and in the United States. One gained the impression while listening to the various discussions that the social reformers are now in the driver's seat and intend to press their advantage in the development of medicine in this country in the future.

The meeting was broken into four sessions: (1) orientation and overview, (2) the hospital and its changing role in health care, (3) Mobilizing health manpower, (4) financing of health care services.

During the first session it was emphasized that there is a need to survey the health care in this country, develop health statistics and make these available in an impartial fashion for common usage so that better programs for treatment can be developed. One of the more interesting discussions during this program emanated from the University of Oklahoma. This state is now developing a program to survey the health needs in that state, mobilize the medical and paramedical manpower with the University of Oklahoma as the nucleus and then develop a pattern of health care throughout the state.

The second session included some thoughts which the hospital staffs in this state should be aware of. These included the development of the concept that the hospital is a single organization, not separate medical staffs and administrations. The governing board is ultimately responsible for all that takes place in the hospital and has a vital interest in the professional standards and the quality of patient care. The medical staff must conscientiously and systematically review the medical practice in the hospital. The appointment of full time salaried medical directors in hospitals and possibly full time chiefs of major services was also discussed. Up to date bylaws are most important.

Means to assess the quality and patient care in the hospital were discussed with the recommendation that the hospital staffs are going to have to develop techniques to standardize and improve the care of the patients. The subject of emergency care in the community and emergency room care was discussed. It was recommended that emergency room service be made available by one hospital in the community and that a program of education of the community to this fact be carried on. This would save duplication of equipment and personnel and would promote better quality emergency care. Disaster type medical care for communities must be developed and rehearsed.

The third session contained discussion in regard to the training of medical and paramedical personnel. Much of the training of paramedical personnel could be carried out in community colleges. Graded systems of responsibility and training for specific areas of endeavor were encouraged. The development of a program of assistant physicians to be utilized in small communities where physicians may not be available was also considered. The discussion of the community health center program of the State of Oklahoma was presented. Under this program the practitioners in the state are members of the teaching staff of the University; go to the University to teach and to be taught on a regular basis. Graduated medical care with the more difficult cases being treated at the University's Hospitals in Oklahoma cities was advocated. Much of the plan envisioned for Oklahoma could be made applicable to the State of South Dakota. The development of health centers for urban areas was also discussed. The requirements of the military for manpower in the medical and paramedical field was discussed.

The fourth session involved presentations relating to cost and financing of health care service. One of the more interesting discussions was presented by Wallace S. Sayre, Professor and Chairman Depart-

ment of Public Law and Government, Columbia University. Dr. Sayre pointed out that whether the medical profession likes it or not they are now in the realm of politics and they are going to have to learn the rules of politics rapidly. One of the fundamentals which he stressed was that of bargaining in order to accomplish the goals which may be desired. In the development of health care programs under the existing law of the land the medical profession as a whole and individually are going to have to face the political facts of life. One of the discussions during this session, the impact of Titles 18 & 19 P. L. 89-97 was rather eagerly awaited by those in attendance at this meeting. However, the discussor, Walter J. McNerney, President, Blue Cross Association, did not shed much light on the problem other than to indicate that there had been too short a time since these programs went into action to form any definite conclusion.

At a later date this program will be published for general consumption. It is strongly recommended that each physician in the State of South Dakota read this material carefully because it is the opinion of this observer that the patterns which were suggested in Chicago are going to come to pass sooner or later.

John B. Gregg, M.D., Chairman
Commission on Medical Service

A discussion was held on the Comprehensive Health Planning Committee and an ad hoc committee of three men from the Council was set up to study this plan. Dr. E. J. Perry moved that R. H. Hayes, M.D., G. Robert Bartron, M.D. and Fred Leigh, M.D. form the ad hoc committee on Comprehensive Health Planning. The motion was seconded and passed unanimously.

A discussion was held on the measles vaccine program. Dr. Fred Leigh moved that the Medical Association encourage the program but leave implementation at the district level. The motion was seconded and passed unanimously.

Dr. P. Preston Brogdon discussed a request received from the State Board of Nursing asking the approval of the Association for the use of films on closed cardiac massage and resuscitation in training nurses. Dr. Brogdon moved that he be authorized to write a letter stating that the use of films on closed cardiac massage and resuscitation are proper in the nurses training program. The motion was seconded and passed unanimously. Dr. J. T. Elston moved that the report of the Commission on Medical Service be accepted. The motion was seconded and passed unanimously.

REPORT OF THE COMMISSION ON LEGISLATION AND GOVERNMENTAL AFFAIRS

More bills appeared before the 1967 Legislature than expected in regards to health problems. A bill requiring all motorcycle operators and passengers to wear protective head gear passed. Pharmacy licensing bill passed with the amendments suggested by the Medical Association. Bill providing authorization for cities and counties to provide ambulance service was passed. Reporting of gun shot wounds was passed. House bill #613 to establish Medicare Analysis Corporation was killed. Senator Bartron's bill for financial assistance (matching funds) totaling \$460,000 passed both houses. This was vetoed by the Governor and then was passed over his veto. Senate bill #145 to license hearing aid dealers was killed in committee. Bill #219 amending the podiatry law passed with the amendment proposed by the Medical Association.

Representative E. Y. Berry is proposing national legislation to control Medicare Title XIX. His proposals are good for the State of South Dakota. The proposals that he introduced would allow the state more leeway and more time in implementing Title XIX without national governmental penalties. (HR-5710).

A luncheon for the legislators in Pierre was held by the South Dakota Medical Association.

Dr. R. J. Foley of our commission attended the Emergency Health Service committee in Sioux Falls on February 7, 1967. This meeting was held to plan a seminar to be held in the spring of 1967 on disaster planning. This meeting will be held on April 13, 1967 and Doctor Foley plans to attend this meeting. He is also attending the AMA Emergency Medical Services conference in Chicago this spring.

The planned informal meeting of the commission to be held in February at Pierre was canceled due to inclement weather.

A meeting of the commission will be held at the time of the annual meeting in Rapid City.

Respectfully submitted,
Robert H. Quinn, M.D., Chairman
Commission on Legislation and
Governmental Affairs

Mr. Erickson summarized the bills concerning the Medical Association for the report of the Commission on Legislation and Governmental Relations. Dr. E. J. Perry moved that a vote of thanks be extended to G. Robert Bartron, M.D. for his work in the State Legislature. The motion was seconded and passed unanimously.

Mr. Erickson discussed a letter received from Senator McGovern requesting the Association's opinion of a bill granting loans for small medical groups to set up clinics. The Council directed Mr. Erickson to write Senator McGovern stating the Medical Association's position on the proposed bill. Dr. E. J. Perry moved that the report of the Commission on Legislation and Governmental Relations be accepted. The motion was seconded and passed unanimously.

Dr. George Knabe reported on the activities of the Commission on Scientific Medicine. He discussed the progress of the new building for the Medical School.

A discussion was held on the TB program and Dr. Elston outlined the program being used in the Black Hills District.

Dr. Brogdon moved to accept the report of the Commission on Scientific Medicine. The motion was seconded and passed unanimously.

Dr. D. L. Scheller gave a report on the Commission on Internal Affairs. A brief discussion was held on the resolution of the Pierre District Society to move the Medical Association headquarters to Pierre. Dr. G. R. Bartron moved that the headquarters not be moved to Pierre. The motion was seconded and passed. Vote: 16 for, 1 against. Dr. Perry moved that the Council accept the report of the Commission on Internal Affairs. The motion was seconded and passed unanimously.

Mr. Erickson reported for the Commission on Communications. A brief discussion was held on plans for a booth at the State Fair. No action taken. Mr. Erickson also announced the promotion of Robert Johnson as Director of Public Relations for the Association and Blue Shield. Dr. Reding moved to accept the report of the Commission on Communications. The motion was seconded and passed unanimously.

Mr. Erickson reported for the Commission on Liaison with Allied Organizations and briefly discussed the pharmacy bill. Dr. Brogdon moved that the report of the Commission on Liaison with Allied Organizations be accepted. The motion was seconded and passed unanimously.

OLD BUSINESS

To fill the term ending June 30, 1967 on the Board of Medical and Osteopathic Examiners, Dr. James Steele moved that the names of Dr. R. A. Buchanan, Dr. J. T. Elston and Dr. George Knabe be submitted to the Governor. The motion was seconded and passed unanimously.

The nomination of M. Stuart Grove, M.D. for life membership in the Association from the Seventh District Medical Society was presented to the Council. Dr. Reding moved that Dr. Grove be accepted as a life member. The motion was seconded and passed unanimously.

(Continued on Page 47)

(Continued from Page 38)

Dr. Russell Brown discussed the full payment contract which has been prepared by South Dakota Blue Shield. He also suggested that the Commission on Medical Service review the standard claim form developed by the AMA and the Health Insurance Council. Dr. Bartron moved that the Commission on Medical Service study the claim form and return a recommendation to the Council. The motion was seconded and passed unanimously.

A discussion was held on a permanent representative to the Heart, Cancer and Stroke Executive Committee. Dr. Reding moved that Dr. Paul Hohm represent the Medical Association at the Heart, Cancer and Stroke Committee and that the president of the State Association act as an ex officio member. The motion was seconded and passed unanimously.

Dr. E. J. Perry moved that Richard C. Erickson be named as registered agent of the Medical Association. The motion was seconded and passed unanimously.

Mr. Erickson held a brief discussion on the agenda of the annual meeting.

Dr. J. T. Elston discussed a bill set up to regulate medical laboratories. The South Dakota Pathology Society will draft a bill and submit it to the Commission on Legislation and Governmental Relations.

Dr. John Gregg discussed a bill to license hearing aid dealers. It was decided that recommendations should be made to the Commission on Legislation and Governmental Relations concerning such a bill.

Dr. Reding discussed the group disability plan through the American Medical Association. No action taken.

The meeting adjourned at 3:00 p. m.

MEETING OF THE COMMISSION ON MEDICAL SERVICE March 18, 1967

Vermillion, South Dakota

The meeting convened at 1:00 p.m. The members present for roll call included J. B. Gregg, M.D.; H. P. Adams, M.D.; T. H. Willcockson, M.D.; G. E. Tracy, M.D.; and Warren Jones, M.D. Also in attendance were P. P. Brogdon, M.D.; R. H. Hayes, M.D.; George Knabe, Jr., M.D.; E. T. Lietzke, M.D.; and Mr. Richard C. Erickson.

A discussion of the state immunization was held. Dr. Tracy reported on the Health Department's program and in particular discussed the measles vaccine program. He also discussed the suggested schedule of immunizations which was published by the Medical Association two years ago and indicated that it will probably be necessary to update this schedule in the very near future. This will be done by the South Dakota Pediatric Society and the information forwarded to the physicians of South Dakota. A motion was made by Dr. Tracy, seconded and passed, that the Council be requested to take a definite stand on encouraging measles immunization clinics, at the district level.

Dr. J. A. Anderson has just returned from the Rural Health Conference; however he was not able to attend the meeting and therefore the executive secretary was asked to contact Dr. Anderson to report on the conference. This report should be made prior to the Council meeting so that Dr. Gregg might include it in his report to the Council.

The meeting concerning Socio-Economics in Medicine, sponsored by the AMA was discussed. Drs. Gregg and Brogdon attended the conference in Chicago and indicated that this area of medicine is becoming of vital importance to the physicians. Mr. Erickson was asked to include an item in the Grab Bag pointing out the article on this subject published in the March 13th issue of Modern Medicine. Next followed a discussion of the reports from Drs. Knabe and J. W. Donahoe concerning the conference on Medical Education which was held in Chicago recently. It was pointed out that South Dakota physicians will have to become increasingly aware of the necessity for continuing re-education through various

programs and re-evaluation of the quality of service given by practicing physicians by the State Medical Boards.

Comprehensive health planning was discussed at some length by the committee. It was the feeling of the group that perhaps the Council should appoint a three man ad hoc committee on comprehensive planning to act in the same capacity as the ad hoc committee on Title 19. It was requested that Mr. Erickson write to Dr. Van Heuvelen on the recent conference held in Pierre, on comprehensive planning and to report to Dr. Gregg any information received from Dr. Van Heuvelen.

Dr. Robert Hayes was introduced to the group as the Program Director for Heart, Cancer and Stroke and Dr. Hayes discussed the program as he sees it at the present time. He also discussed the possibility of Heart, Cancer and Stroke being tied in with comprehensive health planning and also into the area of medical education. A discussion was held on the possibility of the four year medical school utilizing a new concept in medical training. This would be that students would complete their first two years of medicine at the school in Vermillion and then work with instructors in clinical practice for the last two years of their education.

The subject of the tuberculosis control in the State of South Dakota, under the direction of Dr. Belzer was discussed briefly. There was nothing new to report.

An inquiry directed to Doctors Brogdon and Jones regarding the developments in the selection of the Dean for the School of Medicine at the University of South Dakota, revealed that there still has been no definite decision in this matter.

Dr. Knabe spoke briefly concerning the liaison between the Medical School and the Medical Association through the Medical School Affairs Committee. It was the feeling that until the new Dean for the Medical School has been picked and established in office, it will not be possible to decide much from the standpoint of this committee and therefore definite action in this matter will have to await the arrival of the new Dean. After the Dean has been selected, it will be possible to establish some policy for meetings with the Commission on Medical Service which is the Medical School Affairs Committee.

Information was sought from Dr. Knabe as to whether the Medical School is utilizing the services of the Clinical Teaching Staff of the Medical School on the various committees of the Medical School. As of this date, there has been very little representation on the Medical School committees by members of the Clinical Faculty. This is one area where the Medical School can improve its relationship with the practicing physicians of this state.

Prior to the meeting of the Commission on Medical Service, the meeting of the Medical School Endowment Fund Committee, Inc., was attended by a quorum and J. B. Gregg, M.D. It was moved, seconded and passed unanimously by this committee that "the Endowment Association make available up to \$5,000 to the University Medical School to be used in the 9 to 1 federal matching program starting in fiscal year 1968, for the perpetuating student loan program. Said school will make an accounting to the Endowment Association for disposition of these funds."

There being no further business, the meeting adjourned at 1515 hours.

J. B. Gregg, M.D., Chairman
Commission on Medical Service

March 23, 1967

John Gregg, M.D.
318-D West 18th Street
Sioux Falls, South Dakota
Dear Doctor Gregg:

I am sorry to have missed the meeting at Vermillion. I planned to attend but a backlog of patients combined with being on call and several mechanical difficulties interrupted the trip.

This meeting was held in Charlotte, North Carolina because Doctor Washburn was retiring from the Rural Health Program after being on it for ten years. His home is Boiling Springs which is near Charlotte. It was a unanimous conclusion that they would never have another meeting in Charlotte; the accommodations were terrible. Five hundred odd people assembled with about sixty doctors; this was the biggest meeting they have had and it was mentioned that about twelve doctors usually attend the meetings. About fifteen of these doctors were in active practice. Most of the people were Home Economics ladies, State Extension service leaders and State Extension health specialists. The topic subjects and language was directed at these people.

The meeting was divided into four areas: Number one "Understanding the Interdependence of Rural and Urban Areas for Improvement of the Health of People." This subject was approached by an epidemiologist and another Ph.D. that was head of the West Virginia Center for Appalachian studies. They had a government grant to study the model city program and came to the conclusion that they would develop three communities with high schools which would then be entitled to a community with a university on a trade school level. Three of these such areas would be entitled to a university on a four year level and three of these areas would be entitled to a post-graduate type university. It is too early to come to any conclusion as to this type of planning.

The second stated purpose: "To Develop Plans and Utilize more Efficiently Manpower." This field was divided into forums; I attended the one on Health Services. We spent most of the time discussing the nursing program on Medicare, with the visiting nurse especially. Their opinion was that this program would use the nurse that is not being used now; that is the one between the ages of 25 and 35. They could spend two to four hours daily visiting people in their homes. Someone from Duluth, Minnesota mentioned the pilot program with Blue Shield and Blue Cross making up 50% of the bill for visiting nurse and they thought that it was working out quite well. This report will be included in the final report and I think it would be worth reading.

Third was the purpose to discuss and be able to implement the utilization of community health resources. This was discussed by several farm magazine editors, newspaper, radio and television reporters. They came to the conclusion that doctors should make more of an attempt to use these media for transmitting health messages and they went into detail as to how they had set up programs for farm safety, automobile safety and ambulance driver training programs.

Number four was the purpose to assess the effect of environmental factors on the health and well being of people with emphasis on first aid instruction and approved rural emergency medical care. It seems that the whole program last year was built around the assumption that more people die in rural areas because of lack of immediate care than die in the urban areas. The speaker thought that one of the answers to this program would be to mount radio transmitters on all rural vehicles that would start sending out a homing signal as soon as it was in an accident, run out of gas, etc. He stated that the Collins Radio Corporation in Iowa had a government grant to carry on such a study. The conclusion of this portion of the program was that there is no present method of evaluating health or well being.

The program, other than the above mentioned features, was very similar to the socio-economic meeting on health care held in Chicago attended by Doctor Gregg. It was helpful to have read these papers before going to these sessions. This entire program will be published for reading later and I hope that it makes more interesting reading than it did listening.

Yours very truly,
J. A. Anderson, M.D.

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Precautions: Limit dosage to smallest effective amount in elderly or debilitated patients (not more than 1 mg, one or two times daily initially) to preclude ataxia or oversedation, increasing gradually as needed or tolerated. As is true of all CNS-acting drugs, until correct maintenance dosage is established, advise patients against possibly hazardous procedures requiring complete mental alertness or physical coordination. Driving during therapy not recommended. In general, concurrent use with other psychotropic agents is not recommended. If such combination therapy is used, carefully consider individual pharmacologic effects—particularly with known compounds which may potentiate action of Valium (diazepam), such as phenothiazines, barbiturates, MAO inhibitors and other antidepressants. Advise patients against simultaneous ingestion of alcohol or other CNS depressants. Safe use in pregnancy not established. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Observe usual precautions in impaired renal or hepatic function. Periodic blood counts and liver function tests advisable in long-term use. Cease therapy gradually.

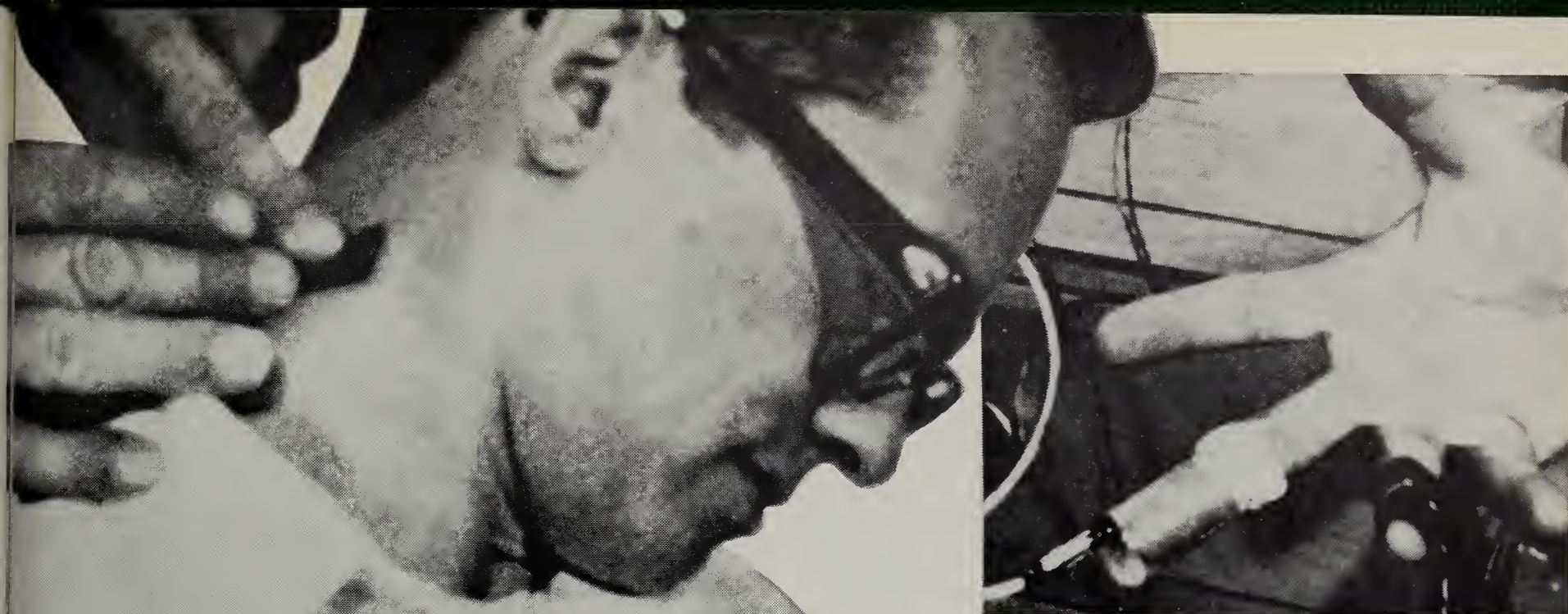
Side Effects: Side effects (usually dose-related) are fatigue, drowsiness and ataxia. Also reported: mild nausea, dizziness, blurred vision, diplopia, headache, incontinence, slurred speech, tremor and skin rash; paradoxical reactions (excitement, depression, stimulation, sleep disturbances, acute hyperexcited states, hallucinations); changes in EEG patterns during and after drug treatment. Abrupt cessation after prolonged overdosage may produce withdrawal symptoms (convulsions, tremor, abdominal and muscle cramps, vomiting, sweating) similar to those seen with barbiturates, meprobamate and chlordiazepoxide HCl.

Dosage—Adults: Mild to moderate psychoneurotic reactions, 2 to 5 mg b.i.d. or t.i.d.; severe psychoneurotic reactions, 5 to 10 mg t.i.d. or q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; muscle spasm with cerebral palsy or athetosis, 2 to 10 mg t.i.d. or q.i.d. *Geriatric patients:* 1 or 2 mg/day initially, increase gradually as needed and tolerated. (See Precautions)

Supplied: Valium[®] (diazepam) Tablets, 2 mg, 5 mg and 10 mg; bottles of 50 and 500.



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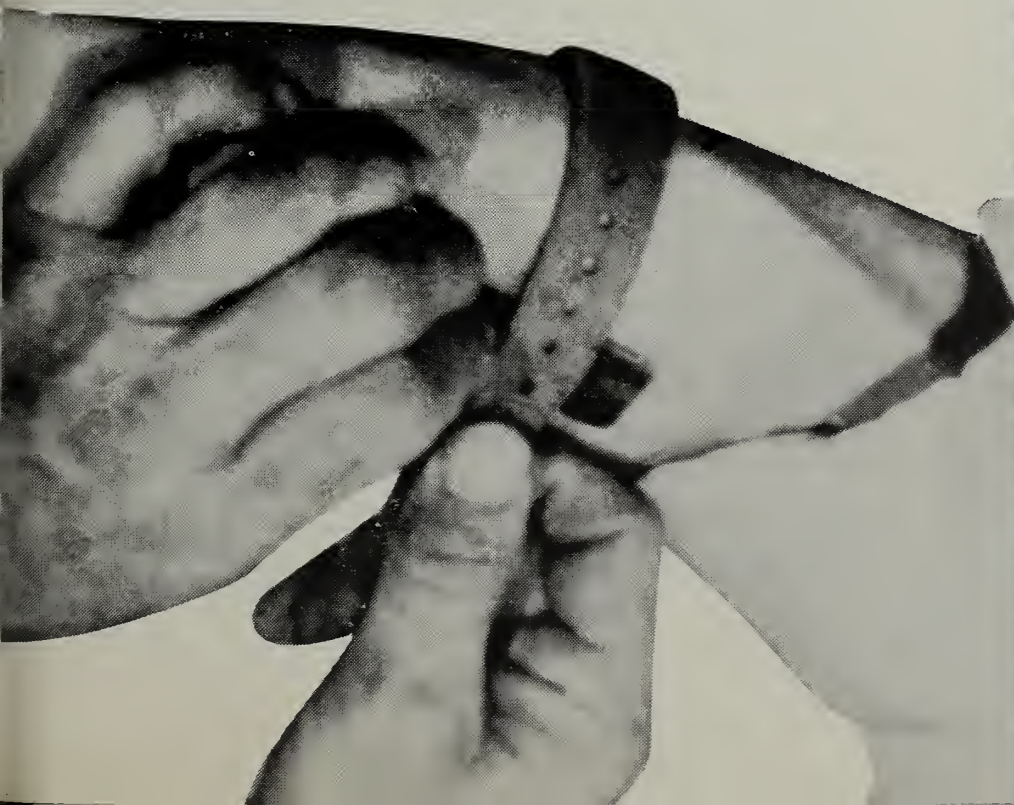
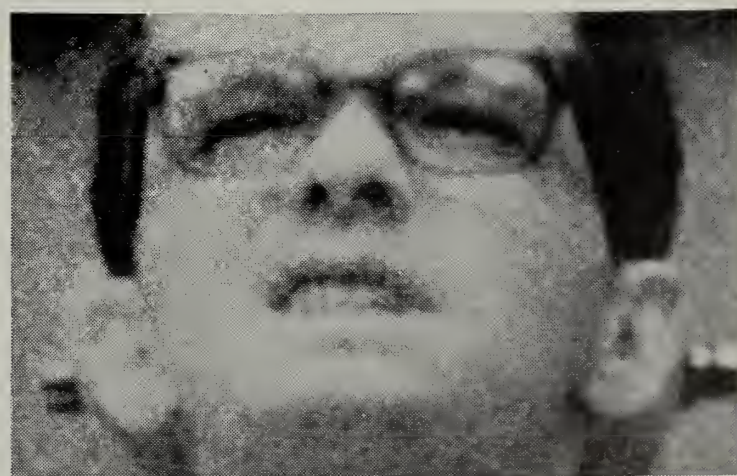


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Path CAP sule

Submitted by the College of American Pathology in connection with the South Dakota Society of Pathologists.

SERUM CREATININE

Creatinine determinations in clinical medicine serve as one of the best indicators of the status of the functioning kidney. Creatine (methylguanidoacetic acid), the precursor of creatinine, arises in the body primarily by synthesis. In the kidney, the amide portion of arginine combines with glycine to form guanidoacetic acid which is then methylated in the liver to form creatine. This is transported to muscle where it is phosphorylated to phosphocreatine, the source of energy in muscle contraction. Approximately 2% of the muscle phosphocreatine is converted to creatinine daily and excreted from the body almost exclusively by the kidney.

A creatinine value as is ordinarily reported is the sum of those substances in serum or plasma filtrates which produce a red color by reaction with alkaline picrate (Jaffe reaction). Actually, all of the reacting substances are not true creatinine; however, in renal disease the elevation of serum "creatinine" is mainly due to true creatinine.

Creatinine is a by-product of muscle metabolism and is produced at a very constant rate. The amount excreted in the urine is so constant that it may be used to check the accuracy of 24-hour urine collections. Normal amounts excreted in 24 hours usually fall between 1.0 and 2.0 grams³. Since the kidney glomeruli represent the only significant route of excretion of creatinine from the body, an increased serum concentration usually reflects impaired renal function. Rapidly progressing muscular diseases may also increase the plasma creatinine level; however, these maladies are seldom associated with chronic renal disease. Clinically they are not difficult to distinguish from kidney disease and should not complicate the interpretation of renal function tests. Other conditions that cause increased protein catabolism do not affect the serum creatinine concentration significantly. For example, hemorrhage into the gastrointestinal tract which causes an elevation of blood urea nitrogen does not increase serum creatinine level. While the creatinine level is independ-

ent of diet and muscular activity, extrarenal factors can cause elevated creatinine values. Prerenal azotemia can be caused by reduced renal blood flow and is seen in congestive heart failure, salt and water depletion caused by vomiting, diarrhea, excessive sweating or excessive diuresis and in shock. Post-renal azotemia can be caused by any obstruction of the urinary tract. The degree will depend upon the completeness and duration of the obstruction.

Because the blood urea nitrogen has a wide range of normal values and fluctuates with variables unrelated to kidney disease, tests based upon creatinine metabolism provide more specific information on renal function and chronic renal disease. The serum creatinine is also a more sensitive indicator of renal disease than the blood urea nitrogen, since as little as 40% reduction of renal function should be reflected in rising creatinine levels, while the blood urea nitrogen shows a statistically significant elevation only after renal function is reduced about 75%. Steadily increasing creatinine levels over a period of time are indicative of progressive renal destruction. Within limits, the amount of destruction is somewhat proportional to the serum creatinine concentration. It should be recognized that uremia causes about 30% reduction in creatinine **production**; therefore, in advanced renal disease the serum creatinine levels will indicate better renal function than actually exists.

The serum creatinine is of less value in **acute** renal disease such as acute renal failure, acute nephritis, etc. A clearance test, preferably the creatinine clearance, is the only acceptable chemical method of measuring renal function in acute disease.

The normal range of creatinine usually varies from 0.6 mg% to 1.0 mg% in women and from 0.8 mg.% to 1.2 mg.% in men¹. Values over 1.5 mg.% definitely indicate impairment of urine formation or excretion². Low serum creatinine values have no clinical significance. Since the concentration is independent of diet, the patient need not be fasting when the blood is obtained for analysis. No allowances have to be made for body weight and body surface when an individual is being serially tested. Minor changes in concentration are of significance because usually only small fluctuations are encountered in an individual.

Other metabolites such as sulfate, phosphate and urate may be elevated in chronic renal disease, but their measurement has no advantage over the plasma creatinine determination.

Material needed for the test: fasting or non-fasting plasma or serum (serum is preferred); amount 3 ml.

REFERENCES

1. *Medical Clinics of North America*, Vol. 47, p. 861, July 1963.
2. Miller, A *Textbook of Clinical Pathology*, 6th Edition, p. 239.
3. *Standard Methods of Clinical Chemistry*, Vol. 3, p. 111, 1961, Academic Press.

PATIENT CARE ONE OF 4 TOPICS OF GENERAL SESSIONS AT 1967 AMA ANNUAL CONVENTION

Patient care, from the standpoint of standard methods as well as research, will be one of four topics presented in general scientific sessions at this year's Annual Convention of the American Medical Association.

The Convention is to be held in Atlantic City June 18-22; the Scientific Program will be at Convention Hall, and nearby hotels, and the House of Delegates will meet at the Chalfonte-Haddon Hall Hotel.

The General Scientific Meetings are open to all physicians attending the Annual Convention.

Other General Scientific Meetings on this year's Annual Convention program will be on the subjects of: backache, healing and sex.

In addition to the General Sessions, each of the 22 Scientific Sections will present scientific programs. Many of the Section programs will, as in past years, be joint meetings of two or more Sections and, in some instances, a specialty society.

Specialty societies joining AMA Sections will include:

—The American College of Chest Physicians, which will join the Section on Diseases of the Chest for a program.

—The American College of Cardiology, which will join the Section on Internal Medicine in a session.

—The Society for Investigative Dermatology, Inc., which will hold its meetings in conjunction with the Section on Dermatology.

ETHICAL RESPONSIBILITIES IN PRESCRIBING DRUGS AND DEVICES*

It is unethical for a physician to be influenced in the prescribing of drugs or devices by his direct or indirect financial interest in a pharmaceutical firm or other supplier. It is immaterial whether the firm manufactures or repackages the products involved.

* Adopted by the Judicial Council, American Medical Association, March 12, 1967.

It is unethical for a physician to own stock or have a direct or indirect financial interest in a firm that uses its relationship with physician-stockholders as a means of inducing or influencing them to prescribe the firm's products. Practicing physicians should divest themselves of any financial interest in firms that use this form of sales promotion. Reputable firms rely upon quality and efficacy to sell their products under competitive circumstances, and not upon appeal to physicians with financial involvements which might influence them in their prescribing.

Prescribing for patients involves more than the designation of drugs or devices which are most likely to prove efficacious in the treatment of a patient. The physician has an ethical responsibility to assure that high quality products will be dispensed to his patient. Obviously, the benefits of the physician's skill are diminished if the patient receives drugs or devices of inferior quality.

Inasmuch as the physician should also be mindful of the cost to his patients of drugs or devices he prescribes, he may properly discuss with patients both quality and cost.

Two well-established general practitioners would like to help third physician interested in having his own practice. We desire close association without partnership.

Excellent chance to enjoy the benefits of solo practice as well as the advantages of association. No salary or other strings attached.

Potential — Overpowering! New practice can gross \$45,000 to \$55,000 within three years. Population of Sioux Falls 74,000 with large drawing area. One of the real beauty spots in the Midwest. Hunting and fishing year round within an hour's drive from the heart of town.

Sioux Falls is fortunate to have two general hospitals which can accommodate up to about 700 patients. There is also a Veteran's Hospital, in addition to a Crippled Children's Hospital.

Wonderful opportunity for the right man. If interested, please reply to:

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"A steroid-nutritional compound (Mediatrix) was used in 100 patients to relieve some of the symptoms caused by degenerative changes of aging... This therapy resulted in improvement of 75 per cent of the patients..."

McNeill, A. J.: Clin. Med. 8:518 (Mar.) 1961.

"Mediatrix (steroid-nutritional compound) capsules, one a day, seem to give definite help to debilitated patients."

Arnold, E. T., Jr.: Geriatrics 12:612 (Oct.) 1957.

"Nutritional and hormone bolstering of function in the aged may have a useful place in geriatrics."

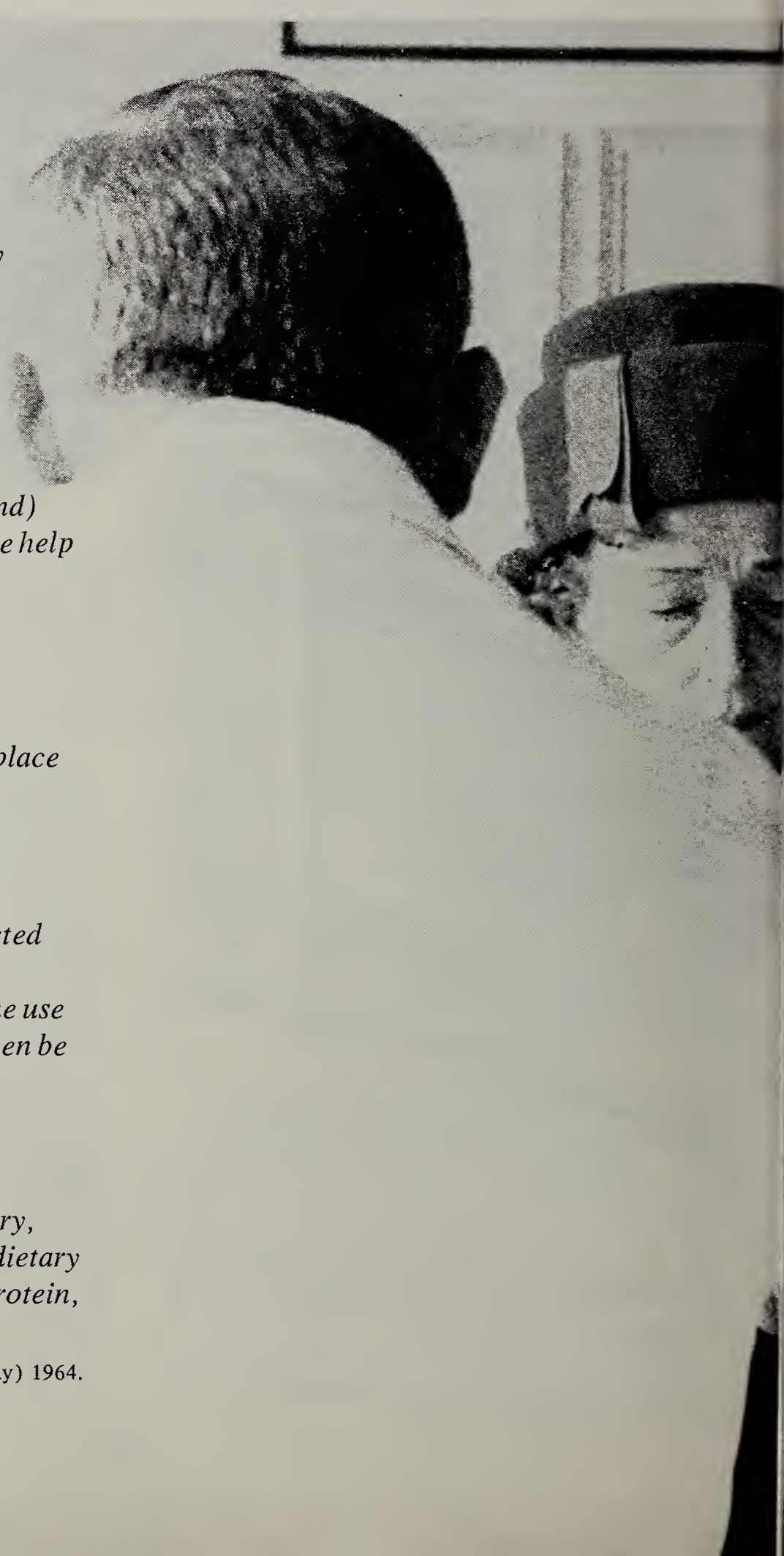
Morgan, A. F.: Gerontologist 2:77 (June) 1962.

"In diets which for any reason are restricted in calories, enough of these substances (B vitamins) may not be supplied... The use of B and C vitamin supplements may then be justified and indeed may be necessary."

Morgan, A. F.: Gerontologist 2:77 (June) 1962.

"Intensive nutritional therapy is necessary, especially in elderly people, to correct dietary deficiencies created by large losses of protein, vitamins and other nutrients."

Riccitelli, M. L.: J. Am. Geriatrics Soc. 12:489 (May) 1964.



THE MONTH IN WASHINGTON

Washington, D. C. — The American Medical Association favors utilizing medicaid instead of expanding medicare.

Dr. Charles Hudson, AMA president, outlined the Association's position at a House Ways & Means Committee hearing on the Administration's bill "Social Security Amendments of 1967" (H.R. 5710). He was accompanied by Dr. Milford O. Rouse, AMA president-elect.

"Available tax funds should be used to give maximum health care to those who need help," Dr. Hudson said. "Expenditure of public funds on those who do not need help limits the resources available to those who do need it . . .

"We believe that a properly administered Title 19 (medicaid) with realistic criteria of eligibility designed for economically disadvantaged persons, plus the encouragement and improvement of voluntary health insurance and prepayment plans for the solvent, provide the best approach to health care financing."

Dr. Hudson said AMA representatives would be glad to meet with the committee and other interested parties to hammer out a workable approach to solving the many complex problems in the medicare program, particularly as concerns its Plan B.

"Unfortunately, Part B did not receive an amount of public or congressional debate warranted by the nature and scope of the proposal," he said. "This committee is now confronted with many problems inherent in the vast undertaking of the federal government in becoming directly involved in the total health care of almost 20 million persons.

"We believe it is possible for the Congress, the medical profession and others interested in the subject to develop a new mechanism for delivering medical care to people over 65 that would be more consistent with existing private sector mechanisms . . ."

Dr. Hudson said that carriers, physicians, patients, and the government all are dissatisfied for various reasons with Part B. He said one possible solution might be to substitute for the Part B program a subsidy to all eligible persons for the purchase of private insurance.

Highlights of AMA's testimony included:

Section 125, to include the disabled.

The adoption of Section 125 . . . could change the direction of medicare from a program for older persons to one aimed at various select

categories . . . We believe Title 19 should be utilized for that purpose.

We urge the Committee to reject this provision.

Section 127, including podiatry.

While recognizing the usefulness of podiatry services, we are impelled to note that if the amendment is adopted, the podiatrist could assume responsibility for the care of some of the more difficult problems in medicine. We believe this to be unsound.

Section 130, creation of Part C of Title 18.

This section would provide a new Part C to cover payment for hospital services rendered to hospital outpatient; and for diagnostic specialty services to both outpatients and inpatients of hospitals.

The AMA opposes Part C *in toto* . . .

Section 131, physician certification.

The AMA endorses Section 131 which would remove the requirement of a physician's certification for inpatient hospital care for each Medicare patient admitted to a general hospital. We urge the Committee to consider this amendment favorably and remove an unnecessary impediment to the operation of Part A.

We further urge that the requirement for re-certification be similarly deleted, since this need should be satisfied as a result of the work of utilization review committees.

Until re-certification is deleted, we suggest that the first certification date be the 20th day of hospitalization, as permitted in the existing law.

Section 220, income maximum under Title 19.

The AMA supports the concept of limiting eligibility for Title 19 benefits to persons who genuinely need financial assistance in meeting their health care needs.

Section 226, free choice under Title 19.

Although free choice is guaranteed for Title 18 recipients, a similar privilege was not extended to Title 19 beneficiaries. We believe this was an oversight, and we heartily support this perfecting amendment to Title 19.

Additional amendments proposed by the AMA.

First, the AMA recommends that Title 18 be

amended to permit payment of charges for professional services on the basis of a physician's itemized statement of charges rather than a receipted bill.

Second, we recommend that Title 18 be amended to remove the requirement for three days of hospitalization before qualifying for extended care benefits.

In addition, we offer a recommendation relating to psychiatric care under Title 18.

Regarding Title 19, we offer six amendments.

First, that the program permit payment to the patient for services rendered to him by a physician on the basis of the physician's itemized statement of charges.

Second, that the program clearly provide for the payment of physician fees on the basis of his usual and customary charges, using the same approach as that applied under Title 18.

Third, that Title 19 encourage the use of insurance carriers in the implementation of state programs.

Fourth, that in the implementation of Title 19 programs, there be no requirement for certification or re-certification.

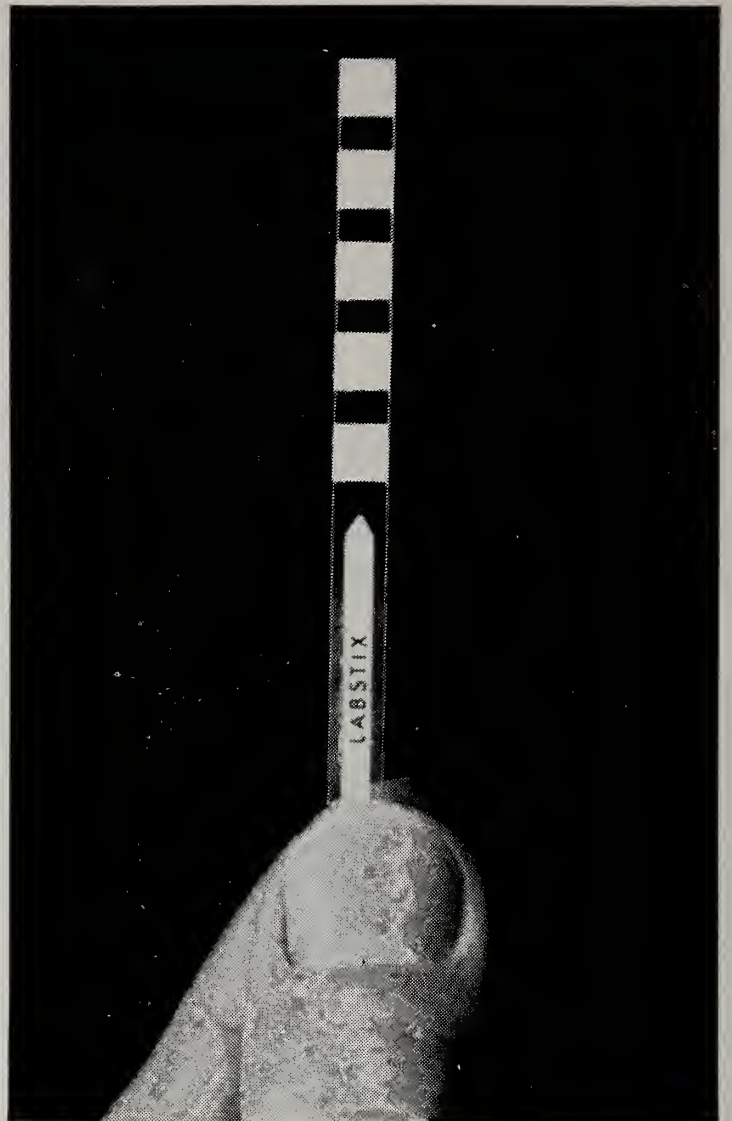
Fifth, that Title 19 permit all state plans to vary the eligibility standards within a state to recognize the very real differences in the cost of living in a rural area, a small town, a city or a metropolitan area.

Our sixth recommendation relates to the fact that Title 19 benefits differ for mentally ill patients depending on whether they are above or below age 65. We believe there should be no distinction in the services available to mentally ill patients.

Physician coverage under Social Security.

We believe that physicians, having been brought under Social Security coverage, should be accorded the same privilege and opportunity for reaching a fully insured status as was accorded other professional groups when they were included in the program.

Accordingly, we urge this Committee to consider the adoption for physicians of an "alternative insured status" similar to that permitted by the amendments of 1954 and 1956 which brought into the program many new groups of people and professional self-employed persons, including lawyers.



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1907—60TH ANNIVERSARY YEAR—1967

COMMENTARY

From

THE UNIVERSITY OF SOUTH DAKOTA SCHOOL OF MEDICINE

Edited by: Dr. Charles R. Gaush, Publications Committee



THE NEW WING

A consultant site-visit was made at the School of Medicine on March 27-28 by representatives of the USPHS. The purpose of the visit was to discuss plans concerning the proposed new construction at the Medical School. The addition will be an extension of two of the present south wings with a connecting east-west section.

A larger Histology-Pathology lab will be incorporated in the ground floor and the present lab will be divided into several office-labs and a Pathology museum. The construction will also provide two additional cubicles in the Gross Anatomy lab. The remainder of the ground floor will be used for an audio-visual laboratory and office-labs for new faculty members.

The most prominent feature of the first floor extension will be an amphitheater-type lecture hall with a seating capacity of approximately 240 persons. This theater will be equipped with a projection booth for showing slides and motion pictures and will have adequate storage rooms adjacent to it. It is designed so that it can be used without entering the present building.

The principal features on the second floor will include larger teaching labs for Microbiology-Biochemistry and Physiology-Pharmacology. The present labs are designed for 44 students and provide insufficient space for our present class of 49. A Virology-Tissue Culture section is planned for the space presently occupied by the Microbiology-Biochemistry teaching lab.

Enlargement of the present building will make it possible to increase our class size and ultimately provide a greater number of physicians for South Dakota.

FACULTY PROMOTIONS

President Edward Q. Moulton recently announced the promotion of Dr. George C. Rinker from Associate Professor to Professor of Anatomy. Dr. Rinker excels in the teaching of Gross Anatomy and uses

the closed circuit TV system extensively for instructional purposes. He was recently named to administer a \$26,000 NFME Grant for the further development of educational television. Dr. Rinker contributes much of his time as a member of the Admissions Committee as well as the Loans and Scholarships Committee. He also finds time to carry out research projects on the telemetering of electromyographic information from indwelling electrodes and the comparative myology of the lower animals.

Dr. Moulton also announced that Dr. James N. Adams, Assistant Professor of Microbiology, was promoted to the rank of Associate Professor. He has been associated with the School of Medicine since 1963 and won the Brookings Clinic Award in 1965. As a member of the University Faculty Council, Chairman of the Medical Library Committee and a member of the Loans and Scholarships Committee, he serves the school with distinction. In addition to his teaching duties, Dr. Adams carries out basic research in the field of microbial genetics and is the recipient of a Career Development Award from the National Institutes of Health.

HEART-CANCER-STROKE PROGRAM

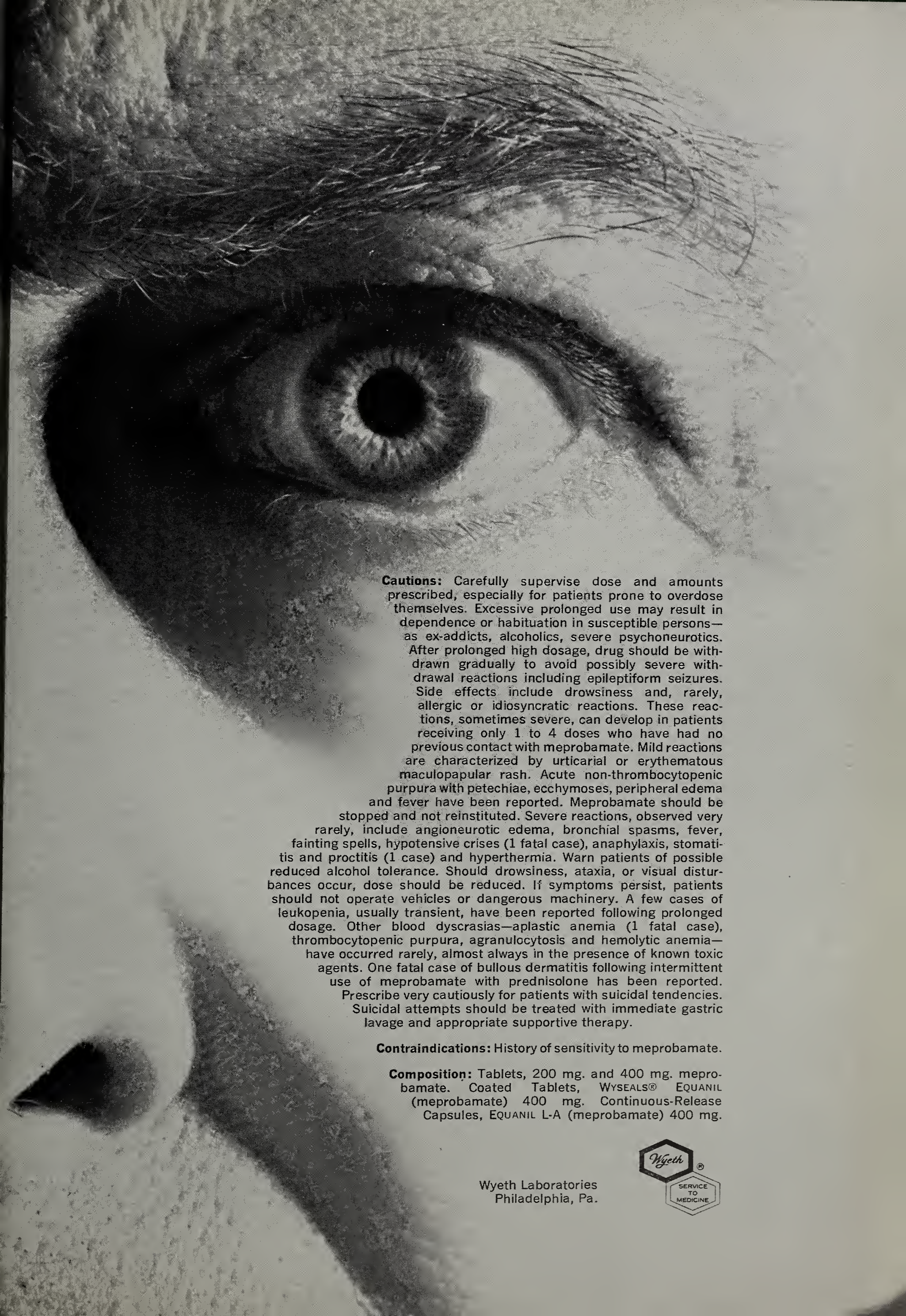
Dr. Robert H. Hayes, Coordinator of the South Dakota Heart-Cancer-Stroke Program, has been appointed to the staff of the Medical School where his office is now located. This program, which has evolved from the "DeBakey Plan," proposes that each region of the U. S. decide what it needs to establish a treatment center for heart, cancer, and stroke patients.

Dr. Hayes indicated that the physicians themselves must determine what is needed for South Dakota and plans to visit each physician personally during the next year in an effort to develop the most suitable program for our state. To assist in this planning phase, Dr. Hayes will distribute a questionnaire that will provide him with necessary information. He will also consider all of your ideas and opinions which may be sent to him prior to his personal visit. Your cooperation in this matter will be greatly appreciated.



3 a.m.

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Cautions: Carefully supervise dose and amounts prescribed, especially for patients prone to overdose themselves. Excessive prolonged use may result in dependence or habituation in susceptible persons—as ex-addicts, alcoholics, severe psychoneurotics. After prolonged high dosage, drug should be withdrawn gradually to avoid possibly severe withdrawal reactions including epileptiform seizures. Side effects include drowsiness and, rarely, allergic or idiosyncratic reactions. These reactions, sometimes severe, can develop in patients receiving only 1 to 4 doses who have had no previous contact with meprobamate. Mild reactions are characterized by urticarial or erythematous maculopapular rash. Acute non-thrombocytopenic purpura with petechiae, ecchymoses, peripheral edema and fever have been reported. Meprobamate should be stopped and not reinstituted. Severe reactions, observed very rarely, include angioneurotic edema, bronchial spasms, fever, fainting spells, hypotensive crises (1 fatal case), anaphylaxis, stomatitis and proctitis (1 case) and hyperthermia. Warn patients of possible reduced alcohol tolerance. Should drowsiness, ataxia, or visual disturbances occur, dose should be reduced. If symptoms persist, patients should not operate vehicles or dangerous machinery. A few cases of leukopenia, usually transient, have been reported following prolonged dosage. Other blood dyscrasias—aplastic anemia (1 fatal case), thrombocytopenic purpura, agranulocytosis and hemolytic anemia—have occurred rarely, almost always in the presence of known toxic agents. One fatal case of bullous dermatitis following intermittent use of meprobamate with prednisolone has been reported. Prescribe very cautiously for patients with suicidal tendencies. Suicidal attempts should be treated with immediate gastric lavage and appropriate supportive therapy.

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GUIDEPOSTS FOR THE ADVANCEMENT OF MEDICINE — 1967

There was recently held in Chicago a conference on Socio-Economic Problems in Medicine. The physicians of this state might well be informed of the thoughts expressed at this meeting because the philosophies expounded foretell the course of medicine in the not far distant future. The speakers who presented their concepts to a large audience which was composed of some practicing physicians, teachers in medical schools, hospital administrators, nurses, directors of clinics and various medical institutions, were not censored by the AMA. They represented the fields of sociology, political science, hospitals and hospital planning associations, medical schools, the military, the Blue Cross, commercial insurance companies, and research institutes concerned with this subject. The conference was divided into four sessions, each one a half day long. (Orientation and Overview; The Hospital and Its Changing Role in Health Care; Mobilizing Health Manpower; Financing of Health Care Services). It had originally been planned for about 250 participants, but because of an unexpectedly large demand arrangements at the last moment were changed to allow about 800 to attend.

Two basic concepts became immediately apparent to an observer attending the session: (1) The social planners are now in the driver's seat insofar as the development of medicine in this country is concerned, (2) The medical schools are going to be the nucleus around which medical care in the states and in the communities will be developed in the future.

Strong emphasis was put upon the need for and the expansion of training facilities for various medical and para-medical personnel and improved methods of continuing education for these persons so as to constantly update methods of treatment. To supplement the shortage

of physicians several avenues were explored. These included the development of the "assistant physician" or the "physician assistant," a person with restricted training and who would be delegated restricted authority to treat patients, supervised by an M.D.; delegation of greater authority to nurses, to include delegating to them uncomplicated obstetrical deliveries and greater discretion in administering drugs; employing the training and skills of the pharmacists in the treatment of patients to a greater extent than they are now being utilized.

Nursing itself will probably undergo considerable change and result in two large categories of personnel: (1) those who undertake training which leads to a baccalaureate degree and the R.N., and (2) those who take lesser training and then fit into technical rather than supervisory capacities. This latter group would include persons skilled in ward care, OR specialists, anesthetists and other special fields. Additional training facilities for those in physiotherapy, X-Ray technology, nutrition, laboratory technology, occupational therapy, medical social work, and other special departments of health care can be promoted if community colleges as well as state supported institutions develop training schools.

The medical staffs are going to have to take the responsibility for careful reviews of the quality of medical care in their hospitals (efficiency committees or medical audits). This will include both the care rendered by the physicians and that given by the ancillary personnel. To review their own therapeutic results the medical staffs have several avenues which are: (1) A statistical approach, (2) Record review, (3) Practice observation. Utilization and medical audit committees employed as educational mechanisms for the improvement of patient care and medical techniques, not as punitive committees, will increase in prevalence and

probably become mandatory in all hospitals if accreditation is desired. There will be increased emphasis on in-hospital training and continuing education of their personnel. Hospital bylaws, rules and regulations in the future will be subjected to close scrutiny, should be updated frequently, and be made very explicit in all areas. The leadership of the medical staff of hospitals will need much updating. To promote continuity in the improvement of medical care, chiefs of staff in the future will have to be picked very carefully with more emphasis on qualification and less on political expediency. Terms of office greater than a single year for officers of the medical staffs and the sections would help promote continuity in the improvement of patient care. Some thought should also be given to the idea of selection by the hospital governing board of the Chiefs of Staff or the employment of a full-time paid physician "medical director." The possibility of full-time salaried chiefs of the major services in hospitals must also be considered.

There will be increasing emphasis on the concept of the community health center, especially in small communities. This center will include the hospital with all of its facilities, the nursing home, the physicians' offices, the pharmacy, the offices of the ancillary paramedical personnel such as the psychologist, the sociologist, speech therapist, audiologist, the hearing aid dispenser, and others who may in any way relate to the medical care of patients. Statewide planning for a community health center program has already been started in Oklahoma (Project Responsibility) and a prototype is now beginning operation. Under the Oklahoma program there will be definite professional and monetary incentives for young physicians to enter practice in small communities and for the communities to contribute to the development of the health care center. There will also be a strong stimulation and a definite time allowed for the practicing physicians in the small communities to keep up to date by frequent visits to the medical school at Oklahoma City where they will teach as well as be taught. Consultation in the local communities by visiting consultants from the University and rapid access to the University Hospitals by helicopter for emergency or urgent cases from the community health center is planned.

Although much of the material presented here may appear to be a Utopian dream to the physicians of South Dakota, these things are much closer than most realize. There is already envisioned and some funds are available in this

state for the development of educational facilities for the physicians through closed circuit or educational television, under the auspices of the Heart-Cancer-Stroke program. The educational TV equipment and facilities have been available to the School of Medicine and at the University of South Dakota for the past three years. All that is needed now is the micro-relay equipment and transmission towers so that the entire state can be bracketed by educational TV. Surveys to determine areas of need and the need itself in the treatment of patients having diseases involving heart, cancer and stroke, "and related disorders" will be started in South Dakota soon under the nationwide program which has now commenced operation. After the investigations are completed there will come specific recommendations for the better care of patients who have these and other afflictions.

There is now operative in South Dakota a plan for the medical treatment of a large segment of the population in community health centers somewhat similar to that envisioned for the communities of Oklahoma. These are the U.S.P.H.S. Indian Hospitals where many of the services contemplated in the Oklahoma plan, are available to the Indian people. The services of visiting consultants as well as physicians in residence at the hospitals are accessible to these people. Other more limited health care plans are operated by some of the larger industries of this state. Community health care for small towns is still not in operation here. However, there is a need for improved health care facilities in many small towns. This will have to be seriously considered by the physicians.

The ideas of change will undoubtedly be unpleasant to some who now practice medicine in South Dakota. However, many of the ideas for improvement in health care are good. In their development there will be pitfalls, obstacles, disappointments. Times are changing and the physicians will have to adapt or fall by the wayside. If the physicians of this state do not seize the initiative and take measures to improve health care, starting at once, it will be forced upon the medical community by patients through the federal government. The South Dakota State Medical Association might contemplate sending a delegate (ion) to Oklahoma or to the USPHS Indian Hospitals or both to study the plans being evolved with the idea of trying to improve the quality of medical care in the whole state.

John B. Gregg, M.D.

"THE HELPING HAND"

A program of vital importance to school age children and their parents is well under way in Sioux Falls. Known as "The Helping Hand Program" its symbol is a yellow hand on a black background.

The primary purpose of this program is to protect children on their way to and from school and school-related activities.

The symbol bearing placard is displayed in the window of a home or business. Each such place is first thoroughly screened by the Police Department and PTA officials in each school district. To qualify as a member displaying the placard, the individual must agree to leave his or her door unlocked during school hours, and to arrange to have an adult present during that time. He or she must further agree to tend only to the immediate needs of the child seeking assistance and to call for professional assistance **immediately**.

The placard's simplicity is for the benefit of the young, non-readers. They can see at a glance the yellow hand and will immediately associate the hand with getting help. This can be taught to pre-schoolers as well.

While the program is primarily aimed at protecting the children from child molesters, it is hoped that it will also help to prevent bullying of the younger children by the older ones. It will be beneficial in cases of injuries incurred en route to school or home as well.

All too often people in less populous areas tend to become complacent with regard to the possibility of child molestation. Perhaps if they were to ask their local police department for a count of the "known child molesters," they would have a rude awakening. For example, one of South Dakota's larger cities has over 300 "known" sex deviates, of which some 100 can be classified as child molesters.

A program of this type can be instituted anywhere — it need not be limited to the larger cities. It is a worthwhile effort which can be undertaken by any active PTA or service organization. What about your community?

LETTER TO THE EDITOR

March 3, 1967

Mr. Dick Erickson
South Dakota Medical Association
711 North Lake Street
Sioux Falls, South Dakota

Dear Dick:

I thought you might like some of these facts and figures being sent to the membership. It was sent to me from the National Association of State Mental Health Directors.

The Federal Budget for our Mental Health-Mental Retardation next year is \$1.4 Billion. Medicare-Medicaid has risen to a new high of \$353,000,000.

The NIMH budget nears \$350 million mark and tops the Veterans Administration for the first time. The department of Defense spends \$58 million in Mental Health and Mental Retardation for servicemen and dependents. Also, \$8.5 million goes into the Mental Health program in the War on Poverty.

We might like to know that the Veterans Administration has about \$340,792,000 invested, which is proposed for 1968. The NIMH has a \$348,640,000 that they are going to expend, which is an increase of \$45,525,000 over last year.

Now the topper that we have in this total Federal spending, of course, is \$1,428,453,154.

Insofar as Community Mental Health Centers and Federal grants are concerned, we are one of the seven states who were approved in the fiscal year of 1967.

There is \$80,000,000 still unallocated in this situation. I thought maybe you could wheel this in and if you want to put my signature after it, fine, if not, it doesn't make a bit of difference to me, but I thought maybe some of our members would be interested in the factor of money.

Sincerely,

Richard B. Leander, M.D.

RBL:mp

This is your

MEDICAL ASSOCIATION

News Notes • Changes • Births • News

Pop's Proverb

Let it be said, "I failed, but not for want of trying."

LENZ NAMED TO BANK BOARD

B. T. Lenz, M.D., president of the Huron Clinic, was recently appointed to the Advisory Board of the Huron Branch of the National Bank of South Dakota.

Doctor Lenz, a native of Conde, South Dakota, graduated from the University of Minnesota Medical School in 1936. He is a director of the Huron Chamber of Commerce and is active in both the South Dakota Medical Association and the American Medical Association.

* * *

Rapid City internist, Reuben Bareis, M.D., was named delegate to the 11th Annual Meeting of the American Society of Internal Medicine by the South Dakota Society of Internal Medicine.

* * *

John T. Elston, M.D., Rapid City, has been re-elected chairman of the Pennington County Board of Health for another one-year term, and will continue to serve as county health officer.

S. F. MAN NAMED SALESMAN OF THE YEAR FOR PITMAN-MOORE

Russell Bonacker of Sioux Falls has been named Salesman of the Year for the Pitman-Moore Division of The Dow Chemical Company.

Among the criteria used were sales increases in both pharmaceuticals and biologicals, support of the complete promotional program and of district objectives, contributions to the company's Improve Quality program, and a good safety record.

YOUR
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TO THE
SOUTH DAKOTA
MEDICAL SCHOOL
ENDOWMENT
FUND
IS NEEDED

The newly elected officers of the Fourth District Medical Society are as follows:

President, S. B. Simon, M.D., Pierre.

Vice President, E. H. Collins, M.D., Gettysburg.

Secretary - Treasurer, J. T. Cowan, M.D., Pierre.

* * *

A postgraduate course entitled "Counseling in Marriage Problems for Physicians and Clergy" will be held at Estes Park, Colorado, June 19-23, 1967. The course is being presented by the Department of Medicine and Religion of the American Medical Association and the Committee on Medicine and Religion of the Colorado Medical Society in conjunction with the Office of Postgraduate Medical Education of the University of Colorado School of Medicine. The tuition for the five-day conference is \$80.00. For a physician and a clergyman who register together, the combined tuition is \$120.00.

* * *

R. E. Shaskey, M.D., Brookings, addressed the Third District Medical Society at their February meeting. He spoke on drug therapy in convulsive disorders and treatment of meningitis.

William H. Griffith, M.D., former Huron physician, died recently in California. Doctor Griffith was associated with the Sprague Clinic in Huron, later reorganized as the Huron Clinic.

He left Huron in 1940 to join Buell H. Sprague, M.D. in a clinic in Hollywood, California. He was still engaged in medical practice at the time of his death.

Doctor Griffith is survived by his widow, a brother, and two sisters. He was preceded in death by a son who was killed while serving with the U.S. Air Force in Kingsville, Texas.

* * *

James S. Lydiatt, M.D. recently attended a postgraduate course at the New Orleans Medical Society.

* * *

An informative booklet entitled, "What you should know about Schizophrenia,"

has been made available by the American Schizophrenia Foundation. It is available for 50 cents from the Foundation, 230 Nickels Arcade, Ann Arbor, Michigan 48108.

* * *

VA PROMOTES VOTAW TO R. I. POST

Frederick L. Votaw, M.D., chief of staff at the Royal C. Johnson Veterans Hospital in Sioux Falls has been promoted to chief of staff at the Veterans Administration hospital at Providence, R. I. Doctor Votaw had been with the Sioux Falls VA Hospital since 1962.

* * *

DIS'N'DATA

THE BONY PROBLEM —

The anatomy of any association or club includes four kinds of bones: (1) wish bones, who want someone else to do the work; (2) jaw bones, who talk a lot but do little else; (3) knuckle bones, who knock everything others try to do, and

(4) back bones, who get behind the wheel and do the work.

* * *

E. S. Watson, M.D., Brookings, recently moderated the 18th annual Pastoral Counseling Institute sponsored by the South Dakota Mental Health Association.

The Institute is designed as a postgraduate educational conference in counseling. Discussion leaders were **Roy C. Knowles, M.D.**, Sioux Falls; Dr. Charles R. Stinnette, Jr., Professor of pastoral theology at the University of Chicago Divinity School, and Father Adrian Kaam, Professor of psychology at Duquesne University.

* * *

John O'Sullivan, M.D., formerly of Hoven, South Dakota, has moved to Redfield, South Dakota. He is now associated with **E. J. Perry, M.D.** and **M. E. Sanders, M.D.**



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*As shown by *in vitro* studies.

1. Crunden, A. B., Jr., and Davis, W. A.: Am. J. Obst. & Gynec. 65:311 (Feb.) 1953.



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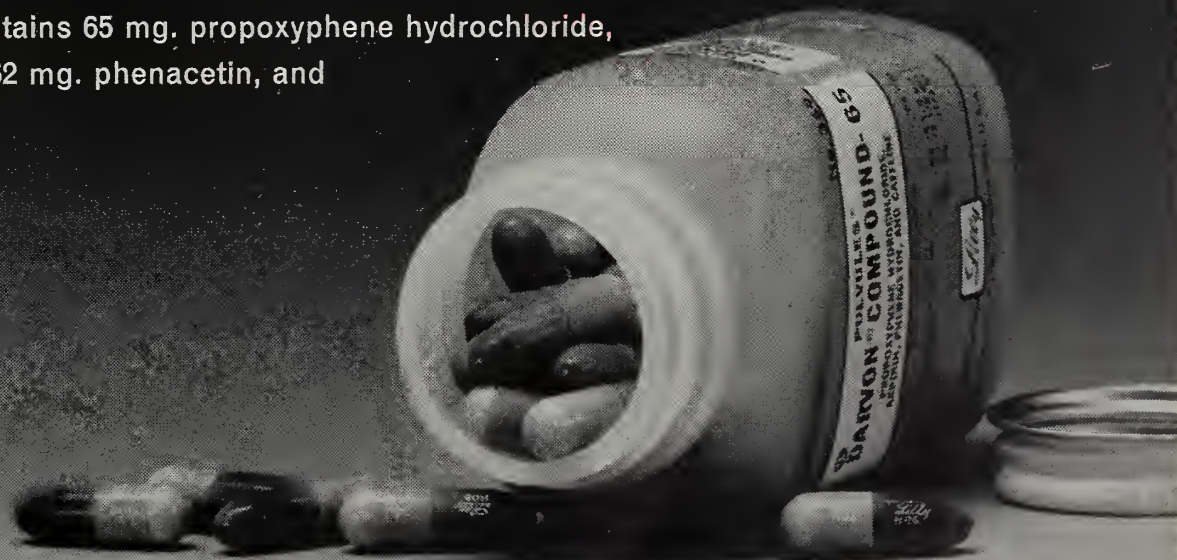
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has an atropine-like action which should be considered when prescribing diphenhydramine hydrochloride. **ADVERSE REACTIONS:** Side effects are generally mild and may affect the nervous, gastrointestinal, and cardiovascular systems. Drowsiness, dizziness, dryness of the mouth, nausea, nervousness, palpitation, blurring of vision, vertigo, headache, muscular aching, thickening of bronchial secretions, restlessness, and insomnia have been reported. Allergic reactions may occur.

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THE SOUTH DAKOTA
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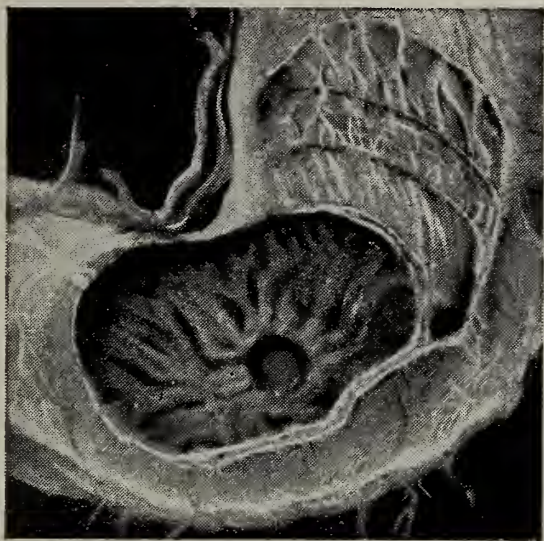
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NEW CHALLENGES and NEW RESPONSIBILITIES

Text of Speech by
L. C. DUNCAN
Chairman of the Board
PHARMACEUTICAL MANUFACTURERS ASSOCIATION
at the
68th ANNUAL CONVENTION
of
THE NATIONAL ASSOCIATION OF RETAIL DRUGGISTS
Tuesday, October 25, 1966
Kiel Municipal Auditorium
St. Louis, Missouri

There is an old saying in Wall Street that the only safe prediction about the future of stock prices is that they will fluctuate.

The action of the stock market in recent months has taught a good many of us the wisdom of that old maxim.

I, for one, intend to keep it firmly in mind this morning in discussing the future of the drug business. In fact, the only broad prediction I am willing to make is that there are many changes in store for us as we enter this new era of medical care. What they will all be, I don't pretend to foresee.

There is, however, one fundamental change already in the making which I do know something about and which concerns me deeply. It is one that will impose a new and heavy burden of responsibility on every one of you in the pharmacy and retail drug field.

I am referring to the rising tide of what, for want of a better name, I will call "bootleg drugs." By drugs, I do not mean narcotics. I mean the steroids, the antibiotics, the diuretics and the whole broad field of ethical pharmaceutical products with which you are all so familiar. Under "bootleg" and "bootleggers" I include the smugglers, the counterfeiters, and all the illicit makers and purveyors of drugs of unknown or unspecified origin.

As some of you may know, I have been compelled by circumstance to acquire some knowledge of pirating and other criminal activities in the drug field because my company has been one of the unhappy victims of their depredations.

The theft of cultures which produce antibiotics, and of processes and know-how for the manufacture of other drugs; the smuggling of pharmaceutical products from abroad and across the borders of Canada and Mexico—these activities have received considerable publicity because of recent court cases. Most of you have probably heard something about them.

Fortunately, a hot pursuit by the F.B.I. and successful prosecutions by the Department of Justice have put a number of these criminals behind bars, where they are spending their time repenting their sins — or, more likely, plotting new ventures, for reasons I'll tell you about later.

But these events, important in themselves, are only a prelude to what I fear is the beginning of a turbulent time in the drug field. What disturbs me is that in many ways it bears an ominous resemblance to the Prohibition Era of the Twenties.

The smuggling of pharmaceutical products from abroad is not new. Nor is their theft, illicit manufacture in the United States and distribution through subterranean channels. Even the counterfeiting of capsules and tablets of well-known brands, and the illegal reproduction of their exact labels and packages have been taking place on a minor scale for a long time. The point is that in the past such activities have been insignificant.

Why? Because there was little or no market for such products.

What has changed is that the market for unbranded drugs of uncertain origin has increased

enormously. A former market measured, at most, in the hundreds of thousands of dollars now has a potential of many millions.

In the past, doctors, druggists and hospitals, with no facilities for testing the products themselves, placed their reliance on the name of the drug manufacturer as a guarantee of potency, purity and safety. It did not matter whether the maker was large or small, or whether he sold his products under brand names or generic names.

What did matter was that over a long period of years the manufacturer had built up and jealously guarded his reputation for high quality products, exacting inspection procedures, effective research, and, in general, the conduct of a highly **ethical** business.

One of my competitors has a slogan which expresses the matter succinctly: "Our integrity—the priceless ingredient."

The physician, the pharmacist and, most importantly, the patient, placed their reliance on this integrity and ethical conduct—and it seldom let them down.

This safeguard which heretofore has served us so well is now under attack and is in danger of being demolished. It began with an assault by the Kefauver Committee on drug prices and brand names and was given great impetus by the Drug Amendments of 1962 which followed those hearings.

One of the principal purposes of the new Amendments, according to their sponsors, was to bring down drug prices. This they proposed to do by placing full responsibility on the Food and Drug Administration for seeing to it that all drugs available on the market, from any source, were fully potent, pure and safe. This desirable objective was to be accomplished by the registration of drug manufacturers, testing and inspections, and general policing activities.

Relying on these new safeguards, the government and others have instituted a program to promote the use of unbranded drugs on the grounds that with the proper inspection, presumably now provided, one drug is as good as another, regardless of source, and price should be the only consideration.

You may well ask: "And what is wrong with that? Isn't the Food and Drug Administration adequately staffed and fully qualified to cope with the enforcement problem?"

I won't attempt to answer that directly. But I will say that if I had the job of Chief Enforcement Officer I am afraid that the spectre of the

old Volstead Prohibition Act would rise to haunt me.

To begin with — in order to inspect anything you first have to find it. I would recall the army of "revenooers" combing the misty "hollers" of the Kentucky hills in a vain attempt to locate the source and dam the flow of illegal booze. The locale of these new drug operators is not the remote areas of the southern Appalachians, but the industrial "badlands" of New Jersey and the jumbled factory and warehousing areas on the outskirts of cities like Chicago and Detroit. Hidden away among legitimate businesses and protected by respectable fronts, these new illicit enterprises are even more difficult to locate than the old bootleg stills.

Secondly, these new policing problems will require the recruitment and training of an entirely new type of enforcement personnel.

Heretofore, the chief requirement for an F.D.A. inspector was some technical knowledge of pharmaceutical products and their methods of manufacture and inspection. In many cases he worked with the plant manufacturing staff to improve the techniques and controls to insure high quality products, as well as to police those already in use. Compliance with the rules and regulations was not difficult to enforce because the manufacturer's good name was his chief stock-in-trade: he could not afford to jeopardize it by adverse publicity even if he were reluctant to comply with particular requests.

The new entrepreneurs in the drug business are an entirely different breed. To find, supervise and control their activities will require not scientifically and technically trained personnel, but a large force of pistol-packing investigators skilled in underworld procedures.

A final problem which would concern me is that, while there are methods of determining potency for most drugs on the market, no battery of tests on the finished product has ever been devised which would enable one to certify that it is completely pure and safe.

In fact, over the years experience has demonstrated that the only real assurance of highest quality products requires the purchase of the purest ingredients available; the individual testing of each batch of raw material by the drug manufacturer, regardless of how many certificates of quality are provided by the supplier; sampling of batches while in various stages of manufacture by an independent control center; the use of the latest electronic devices to pre-

vent mistakes in filling and labeling; and a quarantine of the final product while all the tests are re-run before it is released for sale.

If there are any shortcuts to these exacting procedures to insure high quality products we have not found them.

This situation was summed up by Dr. C. A. Morrell, for many years Director of the Food and Drug Directorate in Canada (corresponding to our own F.D.A.), who stated in his testimony before a special parliamentary committee concerned with the quality of drugs:

"I am loath to have people say that a drug is guaranteed by the Food and Drug Directorate. I do not see how we can guarantee it. There are many subtleties and we do not have the facilities to detect the differences . . . you cannot put 'government approved' on a drug. It is wise to buy on the reputation of a company. You do that in purchases of other items, and I think one is wise to do it with drugs.

"If I were a doctor prescribing I am sure I would tend to prescribe from companies I know."

The gentlemen who run the rackets and nefarious business enterprises in the United States are already well aware of the new opportunities which have been opened up for them in the field of pharmaceutical products. The features which attract them are all present. In fact, a criminal prospectus might read something like this:

ESSENTIALITY—Drugs for treating diseases fulfill an urgent human need — as do prostitution, gambling, narcotics and other activities which have always been so profitable.

MARKET POTENTIAL — Can be estimated as high as a hundred million dollars.

PRIMARY CUSTOMERS—Federal agencies, city, county and state hospitals and all other medical groups and programs financed by public funds because regulations already in effect, or likely to be written, require that their purchasing be done on the basis of competitive bidding. Purchase at the lowest price offered is mandatory unless there are good and sufficient reasons for rejecting the lowest bidder.

POTENTIAL CUSTOMERS — Private hospitals, drugstores, and even dispensing doctors as they participate in Medicare and state public assistance programs, and yield to official pressure to buy and prescribe on a generic basis.

METHOD OF OPERATION — Fits well with other activities. Permits use of dummy corporations to hide the origin of products, the employment of respectable fronts for distributing them, and the application of the usual persuasive methods, where necessary, to secure new customers and the continued patronage of old ones.

POSSIBLE PENALTIES—Negligible. Violations are only a misdemeanor and the penalty, withdrawal of the product and a small fine. F.D.A. inspectors cannot make arrests. They must persuade a United States attorney to issue a search warrant and have Federal marshals serve it and make arrests, if warranted.

Only the actual counterfeiting of regular pharmaceutical products and traffic in narcotics, goofballs (amphetamines), barbiturates, and like products, carry heavier penalties.

Some of you may think that I have exaggerated in order to make a point. However, one of the people who has already had some considerable experience with trying to cope with these activities is Dr. Roscoe P. Kandle, Commissioner of Health of the State of New Jersey, which is a hotbed of illicit drug manufacturing. Let me quote from a report written by him.

"We know from companies we have closed that there exists the menace of individuals who operate under the guise of respectability and who produce, distribute and sell dangerous drugs illegally. These individuals use unskilled labor to manufacture expensive, highly complex drugs, often in dilapidated factories under filthy, grossly unsanitary conditions. The drugs are made without proper checks and balances or quality control and usually there is no record of what went into their manufacture . . . These new-style racketeers keep little or no record of distribution and sales. By this device they can avoid detection and taxation . . . Without hesitation they will infringe patents, imitate and counterfeit standard brands, smuggle materials from abroad . . .

"They select only the most profitable drugs and recently have turned to tranquilizers, diuretics, cortisone products, cardiac stimulants and others.

"The individuals engaged in these unlawful operations know how, when and where to unload their products at a substantial profit. Government agencies, anxious to buy drugs in large quantities at low cost, are especially susceptible."

You may wonder why you have heard so little thus far about such activities. The answer is that this final chapter is just beginning. The full story is yet to be written but the outline of the form it will take is very clear indeed.

Looking back over the events of the past several years, it seems almost incredible that we should have arrived at the point where we stand today.

It is difficult to say where it all began. One of the convicted culprits claims that he really started what has been almost a chain reaction by conceiving the idea that drugs could be bought cheaply abroad and supplied to the U. S. Defense Department at bargain prices which would be attractive to them. He apparently assumed — rightly, as it turned out — that the Defense Department would invoke its special privileges and ignore any patents in the United States. I might add that this individual is bitter about the fact that someone else (according to his version) stole his idea, froze him out and kept him from profiting from it.

In any case, the Defense Department did begin to buy drugs from Italian companies as early as 1959, lured by the savings which were offered by the foreign products. This action by an agency of the United States Government had these consequences:

- 1) It provided a lucrative market for foreign drugs paid for in hard dollars;
- 2) It cloaked the activities of pirate drug firms operating in a patent sanctuary with a measure of respectability;
- 3) It highlighted the differential in price between the products of well-known, ethical companies and those from foreign sources.

Thus, the controversy over drug prices began.

There are those among my colleagues who would say, "Yes, the prices of our drugs are

high when compared with those offered in a thieves' market."

"Yes, they are high when the prices quoted by companies who spend millions of dollars on research, clinical testing and inspection procedures are compared with those offered by firms who do none of these things but cut every corner to produce only the popular forms of the most widely-used products."

Those on the other side of the controversy retort that they are also high when measured by the mark-up over manufacturing costs or return on investment.

I am not here to argue one side or the other. My role today is only that of a reporter attempting to chronicle and interpret what really happened.

The initial buying of Italian drugs by the U. S. Defense Department was soon followed by the Kefauver Hearings with their great emphasis on one point — the substantial mark-up of drug prices over manufacturing costs. These events received wide publicity and attracted great attention throughout the world because of the pre-eminence of United States firms in the discovery and marketing of drugs on a global basis.

The British government started buying cheap drugs from outside sources for its National Health Service, and a number of lesser countries, influenced by the action of two leading commercial nations like England and the United States, followed their example.

Encouraged by these developments, the illicit drug business began to flourish. Cultures which produce antibiotics, steroids and related products were stolen and sold abroad. Research data was filched from files and secretly micro-filmed, as were manufacturing processes and know-how, and a thriving business in drug espionage sprang up.

In the beginning, the manufacturing activities were concentrated in Italy because it is the only modern industrial nation which does not provide patent protection for pharmaceutical products. Later, supplies began to emerge from behind the iron curtain, channeled through respectable commercial fronts in centers like Amsterdam and Zurich to mask the country of origin.

While these activities abroad have had serious consequences for the foreign business of many

American firms, their effect on the domestic drug business has thus far been minor, except for some smuggling of patented products and importing of bulk materials.

What is of great significance to our domestic industry is the mushrooming growth of clandestine manufacturing operations in the United States. Up until recently these illicit operations concentrated on the production of "goofballs" and counterfeiting, but the scope of their operations is now being expanded to include the whole range of ethical pharmaceutical products.

This illicit branch of the industry is still relatively small. The important thing is that the seeds have been sown and the method of operation established. Its rapid growth only awaits the opening up of the vast new markets which the campaign for generic prescribing will provide.

So, here we stand today — with the patent and trademark system for pharmaceutical products under attack from many quarters.

Largely forgotten is the fact that these vital factors provide the funds for the private research which has been so enormously productive and enabled us to lead the world in ethical drugs. Mostly ignored is the fact that the reliance on trademarks, brand names and voluntary compliance with the law and regulations has made it possible to police this vast industry successfully with a mere handful of technically-oriented F.D.A. inspectors.

With these pillars gone or seriously weakened, I am concerned, as a drug manufacturer, with the future of research.

I am alarmed, as a citizen, about the cost of the vast policing effort which the F.D.A. faces and whether or not it can succeed at any cost.

And, as a patient at some time in the future, I will always be worried about the purity, potency and source of manufacture of every drug administered to me in a hospital or supplied on prescription.

I have talked in detail to you about these forebodings — not as an audience. You, as retail druggists, will play an important part in the drama that is unfolding.

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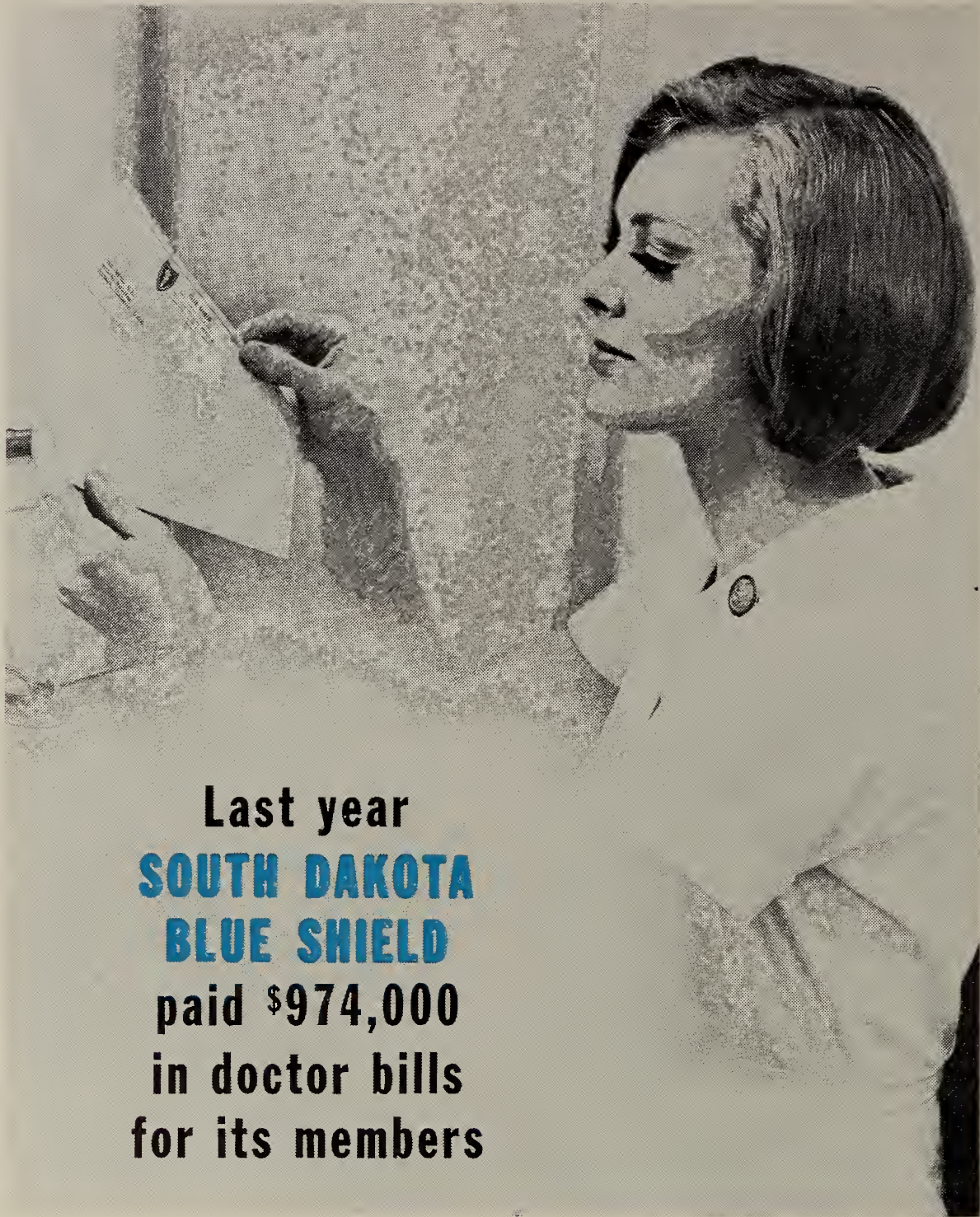
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MEDICAL COSTS: RAPID RISE CAUSING GOVERNMENT CONCERN

Elinor Langer

After several months of study and research the Department of Health, Education, and Welfare has come up with a report* that confirms what everyone who has been paying medical bills knows without being told—that medical costs are rising, and rising fast. The government's interest in this condition arises from the fact that, with the passage of Medicare, Medicaid, and a number of other new programs, it is increasingly a bill-paying participant in the process of medical care and not, as in the past, merely an interested onlooker. The report is a trifle weak on recommendations and is frankly gloomy in its forecast that continued increases are inevitable. It does not say very much that experts on medical economics and critics of American medicine have not been saying for years. But it is a remarkably lucid, sensible, and straightforward summary of what is ailing our medical economy, and its appearance as a government document marks a high point in governmental perception of what the problems are.

The facts seem to be simple enough. According to the HEW report, doctors' fees, which had been rising at a rate of less than 3 percent per year, rose almost 8 percent during 1966. Hospital room rates rose about 16.5 percent, and are now about \$45 a day. Drug prices have not contributed significantly to recent overall increases in costs, according to HEW's analysis, but they do contribute significantly to the high cost of medical care in general.

The essential reason for the rise in doctors' fees, according to the report, is "a substantial and sustained increase in demand without a cor-

responding increase in supply." Recent growth in demand is attributed to many factors, beginning with the simple 28-percent increase in population between 1950 and 1965. In addition, the report says that changes in the internal character of the population have enlarged the groups that tend to seek medical care — there are more women, more city dwellers, more educated people, more children, and more elderly. The expansion of insurance coverage has also played a role, as has the public's conviction that medical care has become more effective, hence more desirable.

During the same period (1950-65) the number of physicians increased by 33 percent. But the proportion of physicians in private practice declined from 72 to 62 percent; the remainder work in hospitals, medical schools, and so forth. And there was a numerical decline in the total number of family physicians — pediatricians, internists, and general practitioners — as more doctors entered specialties.

The doctors responded to this situation partly by increasing their productivity — seeing more patients per week, shifting from house to office visits, increasing their staffs, acquiring complex equipment, and entering into new organizational forms such as group practice and partnership. But they increased their fees as well, and they increased them far faster than the general rise in the Consumer Price Index.

Hospital Costs

As far as hospital costs are concerned, they are affected by the same increase in demand and by the same increase in insurance coverage that affect the doctors. But HEW says that the major reason for the price rise is the rise in wages, which account for two-thirds of the costs of hospital care. Since the report notes that as recently as 1963 there were ironers in Memphis, for example, earning less than 45 cents an hour,

***Medical Care Prices** (Superintendent of Documents, Government Printing Office, Washington, D.C. 20402; 20 cents).

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it would seem that any changes in this department can only be applauded. The report points out, however, that the wage increases have not been "offset by any measurable increase in the 'productivity' of hospital employees," and that "the number of employees per patient is rising, not falling." According to the report, the "non-wage costs of hospitals are also rising, reflecting the growing complexity of hospital plant and rapid increases in the specialized care facilities available in hospitals."

The HEW study found that, although the reassessment of costs at the time Medicare went into effect probably made it seem timely to many hospitals to increase their charges, the increased occupancy rates engendered by Medicare were not in themselves responsible for the price rises. Increased occupancy does not necessarily result in higher costs per patient. By the same token, HEW found no evidence that Medicare was responsible for the rise in doctors' fees.

In the drug department, the HEW study reports that, while prices have not risen as rapidly as have other medical expenses, consumer expenditures on drugs have increased sharply. The report cites a number of reasons for the rising expenditures, but stresses chiefly the fact that more drugs are now available for more purposes. The report says that drugs are now frequently substituted for more expensive forms of treatment, that the public seems anxious to buy drugs such as sedatives and tranquilizers (retail sales of which increased 535 percent between 1952 and 1965), and that old people, of whom there are rising numbers, spend about 2.5 times as much money on drugs as do young people. The cause for concern in this area, according to the report, is that "although average drug prices are not rising appreciably, there is ample evidence that they are higher than they would be if there were greater price competition in the industry, either at the manufacturing or at the retail level. The pharmaceutical industry," it points out, "is characterized by high concentration, high advertising costs, and intense non-price competition."

What Should Be Done?

HEW believes that, in order to help keep prices down, changes should be made in six major areas. First, the department believes that alternatives to hospital care should be encouraged. The report points out that hospital services are the most expensive ingredient of the medical-care bill and that, while most people now have hospital insurance, "far fewer people have insurance which covers less expensive

medical care services, such as care in nursing homes and convalescent hospitals, outpatient care, or organized home health services." As a result, the report continues, "doctors often put patients in hospitals for diagnosis or treatment rather than utilizing less expensive alternative services because a third party will pay the hospital bill." It adds that in many communities lower-cost alternatives to hospital care do not exist.

Accordingly, the department believes that "comprehensive community health care systems should be developed, demonstrated and evaluated," under the auspices of a National Center for Health Services Research and Development, recently proposed by the President. It also believes that group practice should be encouraged by federal action, and that both private and public insurance plans should be broadened to cover more alternative types of health care.

In its second group of recommendations the report calls for an end to "uncoordinated development of health services and facilities [which] often leads to costly duplication and under-utilization of facilities, as well as to serious gaps in the availability of health services." This is, in short, a call for planning, and the report proposes that individual states create strong planning agencies "with the power to affect the rate of expansion of health facilities," and that the federal government supply funds to assist the states in this process.

A third category of recommendations is directed at "improving the internal efficiency of hospitals and other providers of health services." The report proposes that the new health care research center demonstrate ways of reducing costs, and that the government should attempt to provide incentives to hospitals to increase their efficiency.

The HEW report leaves detailed suggestions on manpower to the President's Commission on Health Manpower, a group that has been at work on this question for some time, but the report's main thrust can be summed up in the word "more." It also suggests that, in an effort to use both present and future manpower more efficiently, attention be given to programs such as the President's recent proposal to train physician-assistants (**Science**, 17 February 1967).

A fifth category of recommendations — likely to make the pharmaceutical industry extremely edgy — calls for "improving the knowledge and the flow of information on the effectiveness of drugs." While this goal seems innocuous enough, HEW is proposing to implement it in ways that

undercut the present structure of industry sales: first by studying the possibility of requiring prescription of drugs by their generic names under government-financed programs; second, by having the Food and Drug Administration provide information for doctors on the efficacy and side effects of drugs. Generic prescription has been an industry nightmare since Kefauver, and the drug lobby — in evident anticipation of new governmental moves—has recently stepped up its campaign against it. The suggestion that FDA give doctors drug information directly would have the effect of reducing the physicians' present near-total reliance on the companies for supplying that information, and might have consequences the industry would find equally unwelcome.

Finally, the HEW report calls for "a continuing national effort to improve the efficiency of

medical care delivery," proposing by way of implementation a national conference on medical-care costs and a continuing monitoring of medical prices by HEW and the Department of Labor.

On the whole, it has to be said that the report is considerably longer on analysis than on specific proposals to end the rise in medical prices. For the most part its proposals are for the more forceful implementation of existing federal authority, not for more powers. There is a heavy preponderance of calls for cooperation, consultation, and conferences. Whether these gentle means will be effective it is hard to judge—the report itself betrays very little optimism on this score. But at least, for the first time, the people and institutions that are raising their charges will know that somebody out there is watching them.



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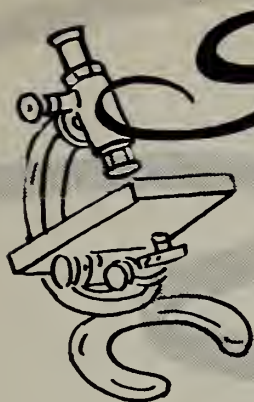
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Obstetrics	●	●	●
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I.M. administration; epinephrine effects may be reversed; dermatological reactions; parkinsonism-like symptoms on high dosage (in rare instances, may persist); weight gain; miosis; lactation and moderate breast engorgement (in females on high dosages); and less frequently cholestatic jaundice. Side effects occurring rarely include: mydriasis; agranulocytosis; skin pigmentation, lenticular and corneal deposits (after prolonged substantial dosages).
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Scientific P A P E R

HEART DISEASE, EXERCISE AND SERUM GLUTAMIC-OXALACETIC TRANSAMINASE*

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Enzymatic transamination was first discovered by Braunstein and Kritsman in 1937¹, although a non-enzymatic type had been described as early as 1930 by Needham². The process of transamination is a chemical reaction in which an amino group is transferred from an amino acid to a keto acid without the intermediate appearance of ammonia. Glutamic-oxalacetic transaminase (GOT) catalyzes the reaction illustrated in Figure 1.

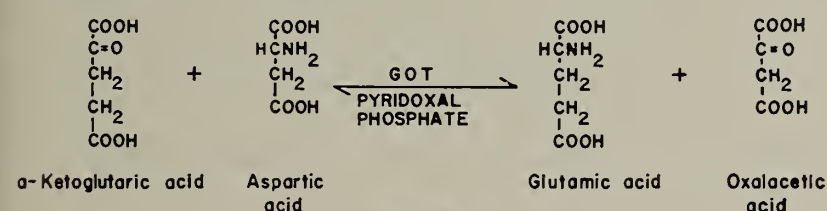


Figure 1

The coenzyme for most of the transaminase enzymes, including GOT, is pyridoxal phosphate³. When carrying the amino group it exists as pyridoxamine phosphate (Figure 2).

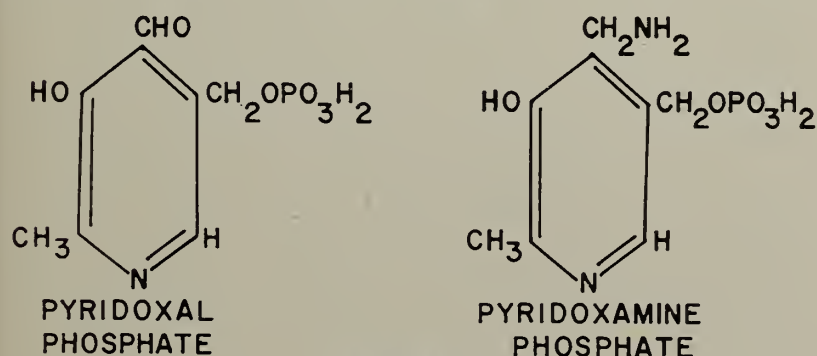


Figure 2

The report which prompted the clinical interest in GOT was that of LaDue, Wroblewski and Karmen in 1954 when they found an increase in GOT activity in the serum following an acute myocardial infarction⁴. Their discovery stimulated widespread investigation of this phenomena and resulted in the demonstration that the enzyme increase in the serum was due to loss of GOT from damaged myocardial cells in the infarcted area^{5, 6}.

The diagnostic value of the SGOT determination in suspected infarction is great. According to some authors, a large number of heart infarcts, perhaps as many as 1/3, cannot be immediately detected by electrocardiography. SGOT determination then is the only immediate and reliable proof of infarction. This is particularly true in cases of repeated infarctions which are especially difficult to detect on the electrocardiogram^{7, 8}.

The enzyme increase in the serum is detectable 4-12 hours following onset of symptoms while maximum activity occurs 24-48 hours after onset of symptoms. It has been demonstrated that an infarct involving less than one gram of myocardial tissue will result in a significant increase in SGOT⁹. The serum enzyme level returns to normal within one week in most cases⁷. This rapid time course should emphasize the importance of getting a blood sample early in the episode, and repetitive samples at close intervals thereafter. It is particularly import-

* Presented at the Black Hills Medical Seminar, Rapid City, South Dakota August 5-6, 1966. Supported in part by research grant AM-06154 from the National Institutes of Health, USPHS.

ant to determine the peak elevation of transaminase activity since this value is proportional to the size of the infarct⁹. A rise in SGOT activity to the range of 200 units is indicative of a poor prognosis⁷.

On the basis of their electrophoretic properties two isozymes of GOT have been identified^{10, 11}. One of these isozymes is located in or on the mitochondria (GOTm) while the other is restricted to the soluble fraction of the cell (GOTs). The isozymes are important in that the type of GOT present in serum normally, as well as following a myocardial infarct is GOTs. It is of interest that prednisolone will prevent the loss of GOTs from the myocardium subjected to an experimental infarct¹². This appears to have no clinical significance at the present time.

LaDue and his colleagues, when first reporting on the elevated SGOT activity associated with a heart infarct, also noted that there was a wide range in the SGOT activity in normal men (4-40 units)¹³. Another group of investigators pointed out, however, that SGOT activity was relatively constant in a given individual from day to day, under normal conditions¹⁴. It will vary in that same individual under special physiological conditions. The most interesting circumstance, at least from our view, was the variation that occurred in response to exercise.

Conflicting reports dealing with this subject have appeared in the literature. The findings of this laboratory in 1962¹⁵ and 1964¹⁶ concerning a fall in SGOT activity following exercise have been confirmed in independent laboratories^{17, 18}. Other laboratories, however, have reported increases in SGOT activity, often into the pathological range following exercise¹⁹⁻²². Still other investigators have completed the spectrum of possible results by reporting no change in SGOT values after exercise^{23, 24}.

The conflicting results reported may be due to one or more differences in procedure between these laboratories. For example, most investigators have studied the SGOT response to exercise at only one or two different loads; even more confusing has been the practice of utilizing different types of exercise. Secondly, the time for taking a blood sample after exercise has varied considerably; some investigators take a sample immediately after the exercise, other investigators will wait until 10 minutes, 60 minutes, or even 24 hours after completing the exercise. Also, when working with small animals most investigators take a blood sample

by a direct heart stab. This is satisfactory if only one blood sample is desired, some investigators, however, have taken repeated samples by this method. The heart stab is very damaging to the myocardium. Preliminary experiments in our laboratory have revealed a stepwise increase in SGOT activity following each heart stab (unpublished data).

Since the SGOT test is widely used to aid in the diagnosis of myocardial infarction these differences must be resolved in order to minimize the possibility of obtaining a high SGOT value as a result of exercise rather than a myocardial infarct. For example, let us consider the case of a hypothetical man some 50-55 years old who appears at a hospital emergency room late Sunday afternoon complaining of a chest pain similar to that experienced in a coronary occlusion two years previously. The EKG reveals nothing new but the SGOT test yields a value of 75 units. A careful history reveals that the patient spent Saturday morning spading a garden, Saturday afternoon was utilized to mow and then rake his large lawn and Saturday evening he and his wife went bowling. The question then, is the SGOT elevation related to this unusual exercise load or to a new myocardial infarction? Experiments recently reported from this laboratory may have provided an answer to such a question²⁵.

The experimental animal utilized was the albino rat. Serum for the SGOT determination was obtained by a single heart stab on unanesthetized, restrained rats immediately after exercise. The SGOT method used was that of Babson²⁶ as modified by Furuno and Sheena²⁷. The animals swam for either 1 min., 5 min., 10 min., 15 min., 30 min., 60 min. or 120 minutes.

In this study we found the duration of swimming time determined the SGOT response observed. Swimming for a very short time (1 min.) caused a decline in SGOT activity while a five minute swim resulted in elevation of such activity. A 10 or 15 minute swim caused no change in SGOT activity but longer swimming times (30, 60 or 90 min.) again resulted in elevated SGOT activity. It would appear then, that a heavy work load, or an unusual exercise load, imposed on man over a period of one day or more could cause an elevation in SGOT activity. In such a case SGOT activity should return to normal in 12-16 hours¹⁹. An infarct with irreversible damage to the myocardium would be marked by a persistent loss of GOT into the

serum (4-7 days) as indicated earlier in this discussion⁷.

The mechanism responsible for the SGOT changes during the first 5 minutes of a swimming exercise is unknown. The elevated SGOT activity associated with the longer duration swimming episodes might be due to a hypoxic condition developing in the active muscles. This would increase the permeability of the cell membrane to a degree sufficient to allow leakage of GOT into the serum. Such a mechanism has been postulated by other investigators in this area of research^{21, 28-30}. Highman and his colleagues at the National Institutes of Health have suggested, however, that the hypoxic condition may act indirectly by first stimulating release of catecholamines³¹. These, in turn, are responsible for the increased permeability. Their hypothesis resulted from studies on dogs in which they infused large amounts of norepinephrine or epinephrine. The work of Gray and Beetham suggests that the doses utilized by Highman were far in excess of the physiological release of these catecholamines during exercise³².

Our laboratory has introduced data which may partially explain the SGOT results observed in prolonged exercise. In previous publications we have demonstrated that rats subjected to strenuous exercise accumulate GOT in heart, skeletal muscle and liver¹⁶. The same accumulation occurs in the left ventricle of rats faced with an elevated systemic blood pressure induced by coarctation of the abdominal aorta or by administration of DOCA^{33, 34}. Such an increase in the tissue levels of GOT would result in an elevated tissue/serum gradient, thus favoring diffusion into serum and might explain the increased serum GOT associated with the longer duration swimming exercises. Additional support for the concept has become available. This laboratory published a paper in 1965 dealing with myocardial and skeletal muscle transaminase levels in response to exercise after adrenocortical blockade³⁵. The substance used to block the adrenal cortex was diphenylhydantoin (Dilantin). The administration of this drug to normal animals caused an increase in GOT activity in the heart. Recently Japanese investigators reported that Dilantin administration caused elevation of serum GOT levels³⁶. It would appear then that Dilantin elevates heart GOT (quite possibly it has this effect on other tissues as well) increasing the tissue/serum ratio and increasing its tendency to diffuse into the serum.

The function of GOT in serum is unknown, indeed it may have no function there but merely represent slow leakage from heart, skeletal muscle and other tissues as a normal occurrence. Also, the function of the enzyme in heart and other tissues remains obscure, but it appears to be closely related to the contractile process, since the appearance of contractile activity in the fetal heart coincides with the appearance of GOT activity³⁷. Cohen has pointed out that the role of transamination (GOT) appears to be one of providing a common pathway for glutamic acid to alpha-ketoglutaric acid³⁸. He also pointed out that the rapid rate of transamination and its independence of aerobic conditions indicate its importance in making alpha-ketoglutaric acid available for muscle metabolism. This substance could enter the Krebs Cycle and result in an elevated production of ATP which would aid the exercising animal in meeting the increased work load.

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LIGAMENTOUS INJURIES OF THE ANKLE AND KNEE*

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Sioux Falls, South Dakota

Most ligamentous injuries of the ankle and knee will respond satisfactorily to a regime of limited activity and protective dressings. Oral medications and various injections in the affected area are used to reduce the pain and swelling. Roentgenographic examination is mandatory to rule out any bony injury.

A small percentage of these twisting, abduction or adduction injuries do not respond satisfactorily to the usual treatment. Complete recovery does not occur in the usual two or three weeks. It is this group of cases on which the present discussion is centered.

At the ankle, the ligaments most commonly affected are the components of the lateral collateral ligament of the ankle. The anterior talofibular ligament extends from the anterior border of the fibula to the neck of the talus. The calcaneofibular ligament runs from the tip of the fibula to a colliculus on the lateral surface of the calcaneus while the posterior talofibular ligament goes from the malleolar fossa of the distal fibula to the posterior process of the talus. Medially, the strong deltoid ligament fans out from the medial malleolus to be attached to the talus, scaphoid and calcaneus.

At the time of injury, complete rupture of the ligaments of the ankle usually is difficult to differentiate from a partial rupture or sprain. Usually, however, the pain and swelling are more severe and persistent than that seen in the ordinary sprain. The pain and muscle

spasm associated with the injury prevent proper clinical examination for instability. Only after the patient has been put to sleep and under anesthesia can the true status of the ankle joint be ascertained. Ordinary X-rays of the ankle are routinely negative (Fig. 1).

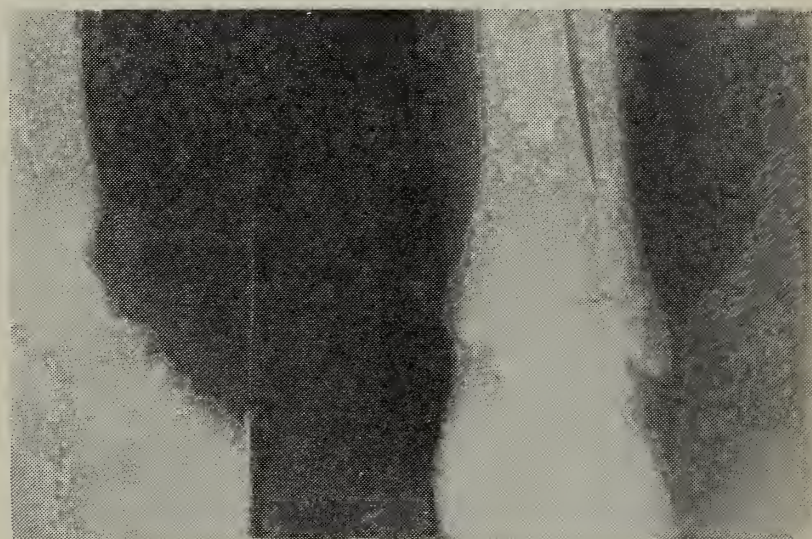


Fig. 1 - Routine X-ray views were negative after a severe ankle injury with multiple fractures elsewhere.

With the patient relaxed, the instability of the ankle can be demonstrated (Fig. 2). This is usually due to rupture of the anterior talofibular and the calcaneofibular ligaments; injuries to the posterior talofibular ligament are not common¹.

With early recognition, suture of the injured ligament is the ideal method of repair and is a highly successful procedure. In old cases, reconstruction of the ligaments by the method of Watson-Jones⁵ has been an extremely effective procedure and in our experience has held up well over a period of many years.

* Paper presented at the meeting of the South Dakota Chapter of the American College of Surgeons on January 21, 1967 at Huron, S. D.

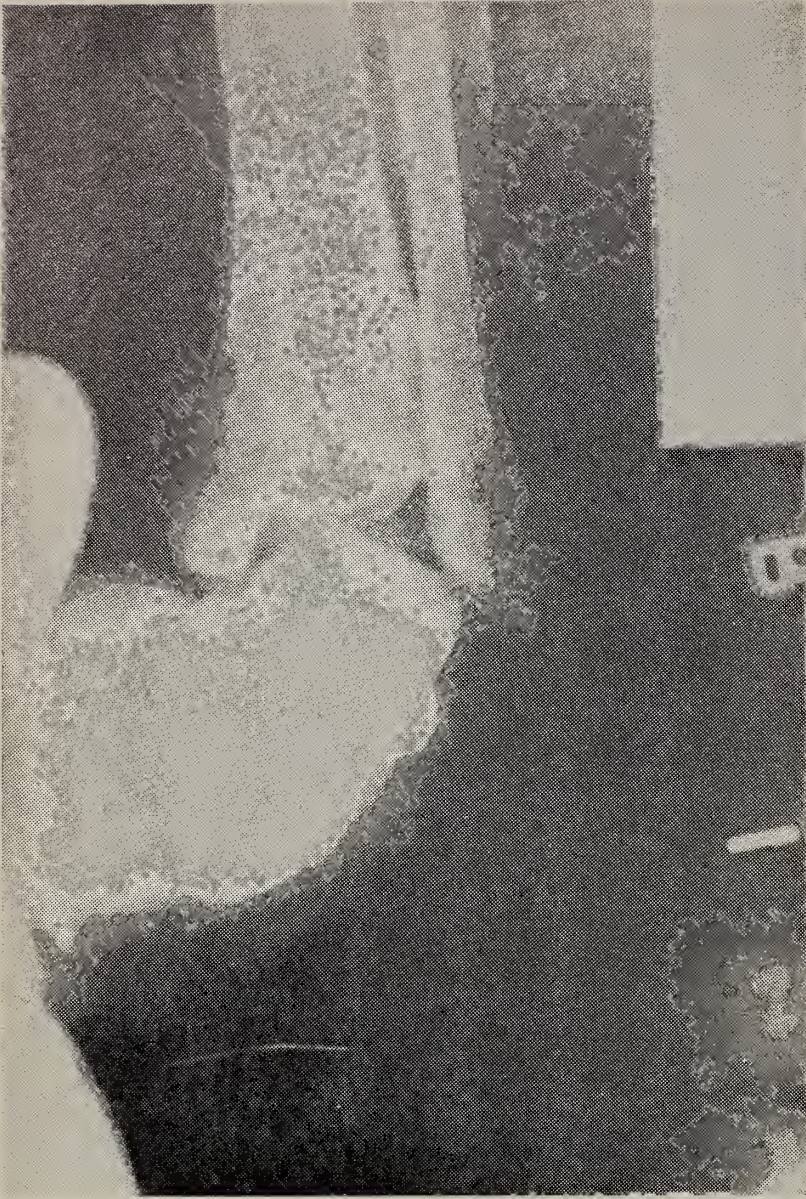


Fig. 2 - Stress X-rays showed an unstable ankle with rupture of the lateral ligaments.

Avulsion of the attachments of the deltoid ligament due to eversion injuries (Fig. 3) are infrequent but respond well to early suture and immobilization in a plaster-of-paris cast for eight weeks.

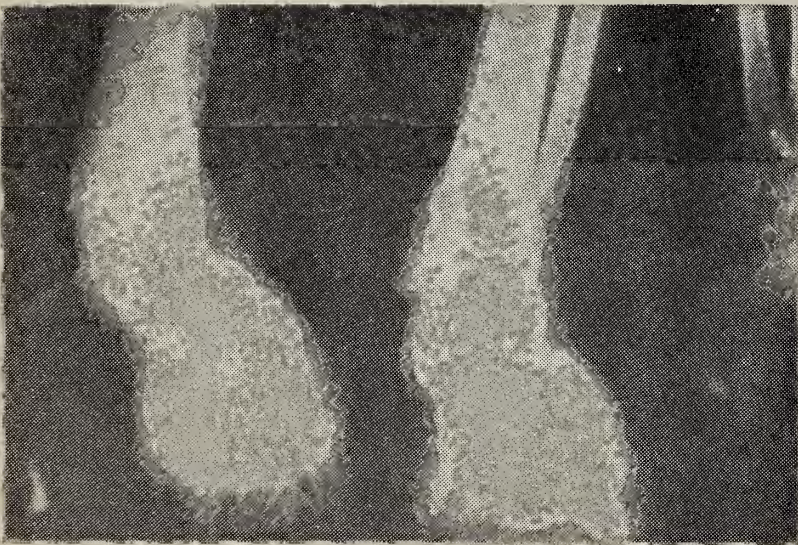


Fig. 3 - Avulsion of the deltoid ligament from the medial malleolus, with a dislocation of the subtalar joint. Closed reduction of the dislocation and suture of the avulsed ligament resulted in normal function.

The ligaments of the knee are composed of the tibial or medial collateral, lateral or fibu-

lar collateral ligament and the cruciate ligaments. The anterior cruciate ligament is attached anteriorly to the non-articulating surface of the upper tibia and extends upward and backward to attach to the posterior aspect of the inner surface of the lateral condyle of the femur. The posterior cruciate ligament is likewise named from its attachment to the tibia where it attaches in the posterior intercondyloid fossa and extends upward and forward to attach to the lateral surface of the medial femoral condyle. The medial or tibial collateral ligament extends from the medial femoral condyle above to the medial tibial condyle below. Its deeper fibers, extending from the margins of the joint, give attachment to the medial meniscus. The fibular collateral ligament extends from the lateral femoral epicondyle to the head of the fibula below. It has no attachment to the lateral meniscus, being separated from the latter by the popliteal tendon.

At the knee, as in the case of the ankle, ligamentous injury is often masked by the pain and involuntary muscle spasm associated with the injury. The tibial collateral ligament, which



Fig. 4 - Roentgenogram showing tilting of the tibial surface in a football player after routine X-ray views were negative.

is injured much more frequently than the fibular collateral ligament, may be injured in the flexed knee without an injury to the anterior cruciate ligament which stabilizes the knee in complete extension. On examination, abduction of the extended knee is not possible with an intact anterior cruciate ligament. If the knee is flexed slightly, widening of the joint space of more than 10 degrees (Fig. 4) is usually diagnostic of an injury to the tibial collateral ligament². The intact anterior cruciate ligament will prevent anterior displacement of the tibia on the femur with the knee flexed at 90 degrees, the so-called drawer sign, while an intact posterior cruciate ligament will prevent posterior displacement of the tibia on the femur with the knee flexed 90 degrees. When the anterior cruciate ligament is injured at the same time as the tibial collateral, abduction of the extended knee is possible and can be demonstrated by X-ray. With involvement of the posterior cruciate in addition, increased abduction is possible. (Fig. 9).

In contrast to the ankle, delayed ligamentous repairs of the knee are not too satisfactory, even in the hands of experts. As emphasized by O'Donoghue³, early repair of the ligamentous



Fig. 5 - Same case after attachment of the distal tibial collateral ligament with a stainless steel staple. A stable knee resulted.

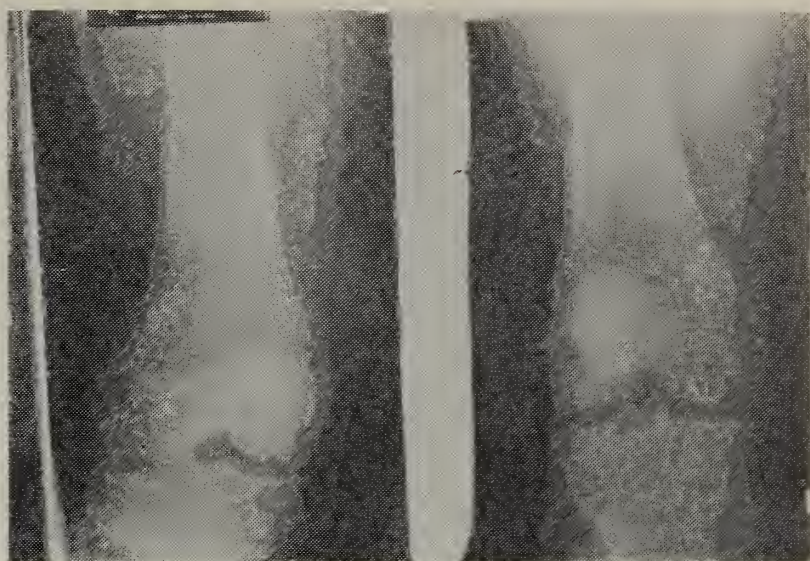


Fig. 6 - Routine views of this injured knee were negative.

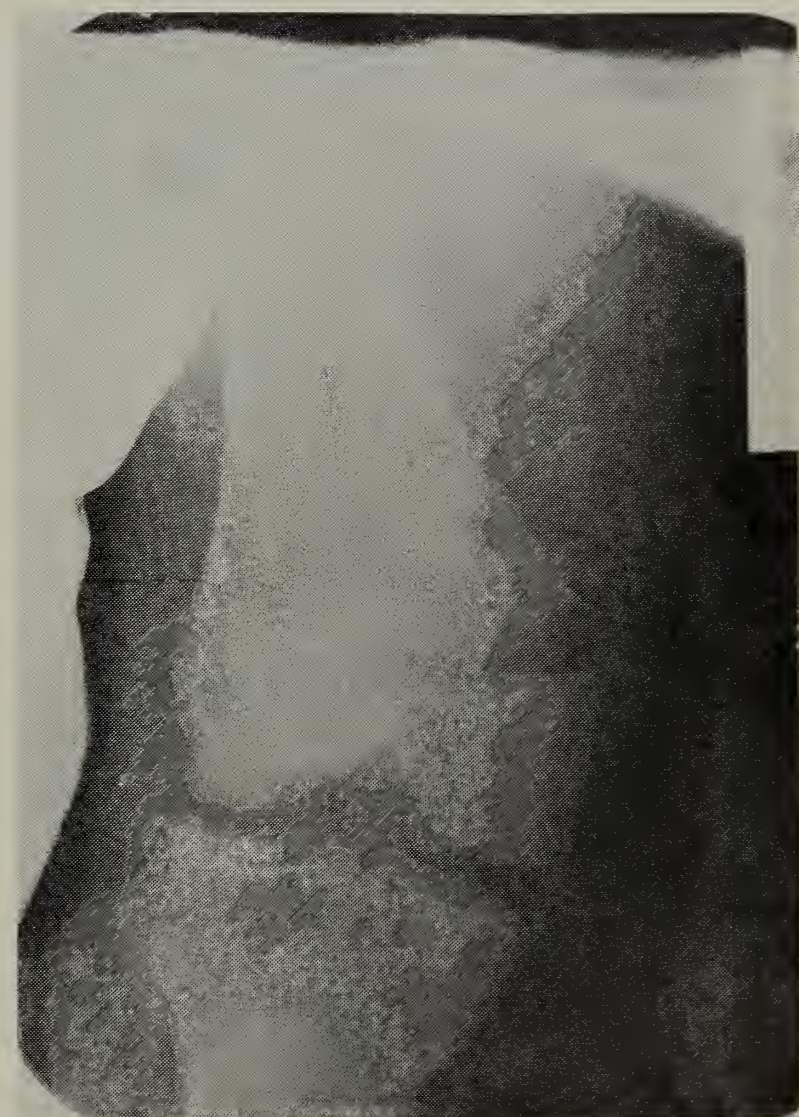


Fig. 7 - Stress views of the same knee showed a fracture of the medial femoral condyle in addition to widening of the joint.

structures is an extremely effective procedure. Frequently the injury to the anterior cruciate and tibial collateral ligaments is associated with a tear of the medial meniscus, the so-called "unhappy triad"³. Fracture of the medial femoral condyle⁴ can be associated with this (Fig. 6, Fig. 7). In repair of the ligaments of the knee, we have used various means, including staples (Fig. 5, Fig. 10), pullout wires and chromic sutures. Immobilization in a cast with emphasis on quadriceps setting exercises performed hourly during the day is extremely important in



Fig. 8 - Same case following repair of the tibial collateral and anterior cruciate ligaments and excision of torn medial semilunar cartilage. A year later the patient was chosen "all state guard" on completion of the football season.

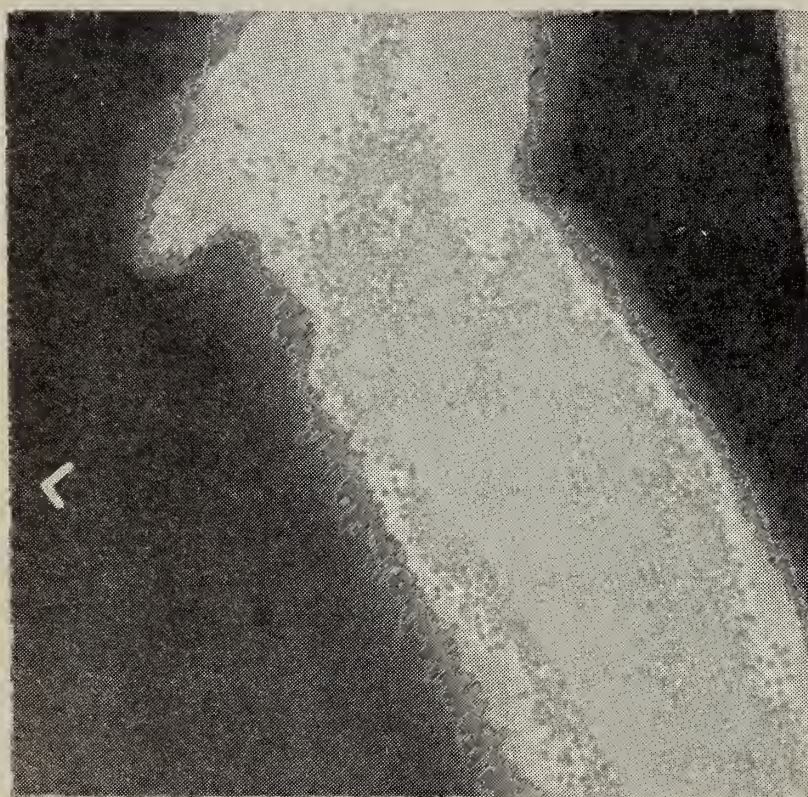


Fig. 9 - With involvement of the posterior cruciate in addition to the tibial collateral and anterior cruciate ligaments, increased abduction is present.

achieving a good clinical result. The usual period of immobilization of six to eight weeks is required of most ligamentous injuries of the knee.

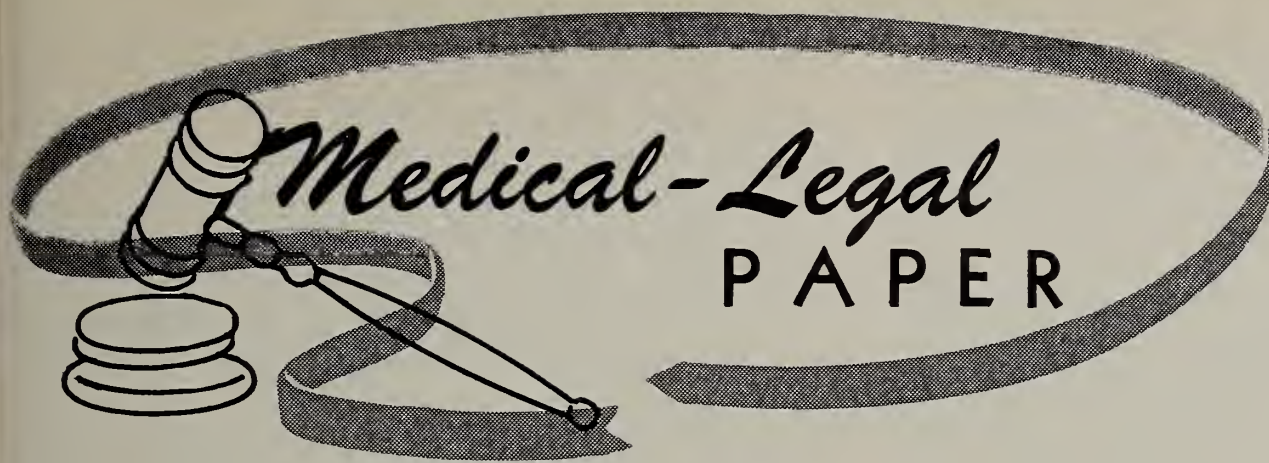


Fig. 10 - Late repair of the elongated tibial collateral ligament by the method of Black. The proximal bony attachment of the scarred ligament is transferred upward and fixed with staples.

Old ruptures of the ligaments of the knee do not lend themselves to reconstruction, particularly with associated injuries to the articular surface of the joints. Certainly no attempts should be made to reconstruct the ligaments until after the patient has been on a long course of physical therapy and progressive resistive exercises. No operation can restore the original structure and function of the ligaments. Reconstruction of the tibial collateral ligament has been the most satisfactory repair. Our personal preference has been the procedure of Black² (Fig. 10) in which the upper attachment of the residual scarred ligament is transferred to a more proximal level on the femur where we prefer to fix it with two stainless steel staples.

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MEDICAL-LEGAL IMPLICATIONS FOR MEDICAL STAFF OFFICERS AND COMMITTEES

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The position as an officer of a medical organization or membership on an important committee comes to most physicians at some time during their active professional lives. Accompanying the honour of such positions there is responsibility and, unfortunately, certain hazards. It is not common knowledge that some professional liability and malpractice insurance may be inoperative when the physician is acting in a capacity outside the direct practice of medicine.

Protection for the best interests of the patient while he is under medical treatment or hospitalized must be the primary purpose of physicians individually, the hospital staffs administratively, and medical societies collectively. In most communities today medical care is adequate and the patient leaves treatment the better for it. Occasionally treatment may be less than optimum. If this is repetitious the elected officers of the hospital medical staff or the local medical society may be put into the circumstance that they must censure a colleague, limit his practice or hospital privileges, or perhaps deny him the privilege of practicing in a hospital or in the community. This poses thorny problems, not the least of which is the possibility of litigation, alleging restraint of trade or deprivation of means of livelihood. Despite the fact that such litigation may have little foundation in fact, it may be most embarrassing to

all concerned, costly in terms of time lost, damage to reputation, and potentially very humiliating. There is nothing so distasteful or potentially as frustrating to the officer of a medical society or hospital staff as having the duty to censure a colleague. Yet this is an obligation of elective or appointed office made necessary by the need to constantly improve the quality of medical care.

Injudicious application of the censure authority and personality conflicts between the parties involved has in the past led to serious repercussions. For this reason, the hospital or medical society officer who is in a disciplinary situation too often takes the easiest pathway out of the dilemma which is to whitewash the offender, avoiding the onerous complications which might attend vigorous action. This approach to the problem, although less strenuous to all concerned, does not serve the best interests of the patients or advance the quality of medical care.

Tissue, Medical Records, Credentials, and Executive Committees too frequently are plagued by dissatisfaction with their actions. Grievance Committees are highly labile sources of contention. With the advent of the Utilization Committees there has been presented to medical organizations another enigma in terms of the medical-legal responsibility of the physicians who sit on them. Unpopular decisions by such com-

mittees may invite litigation involving the committee as a whole or individually, the attending physician, and the patient despite the fact that the committee acted without malice and in good faith, in accordance with by-laws, rules and regulations.

In the event of lawsuit against officers or committee members, despite the fact that the suit may have little basis in fact, if the professional liability insurance of the individual, the hospital, or the professional society, does not cover such action, the cost of defense must be borne by the physician himself. Not only is this costly in terms of dollars and cents but in the number of hours lost from practice, adverse publicity, and psychological trauma. Legal protection for officers and committee members of hospital staffs, medical societies and other medical organizations is becoming a subject of increasing interest in this country today.

The avenues for legal protection open to physicians in an executive or committee status of hospitals or medical societies are threefold.

(1) Malpractice or professional liability insurance which covers the situation. This can be on an individual basis or a policy purchased by the organization, or both. A physician in an executive or committee status of a hospital or medical society might wisely consult his insurance agent or insurance company to determine if he does, in fact, have the standardized form of National Bureau of Casualty Underwriters coverage, or ask them to check the "insuring agreement" to be certain it reads as follows:

Coverage A - Individual Coverage

Payment on behalf of the insured of all sums which the insured shall become legally obligated to pay as damages because of injury arising out of

- a. malpractice, error or mistake of the insured or of a person for whose acts or omissions the insured is legally responsible except as a member of a partnership, in rendering or failing to render professional services, or
- b. **acts or omissions of the insured as a member of a formal accreditation or similar professional board or committee of a hospital or professional society.**

committed in the practice of the insured's profession.

Exclusions under the policy should also be inspected to see that they read:

- a. any use of X-ray apparatus for therapeutic treatment;
- b. liability of the insured as proprietor, su-

perintendent, or executive officer of any hospital, sanitarium, clinic with bed and board facilities, laboratory or business enterprise;

- c. under Coverage B, such insurance as is or can be afforded under Coverage A to any member of a partnership (not applicable when Coverage A only is provided);
- d. **Nuclear Energy Liability Exclusion (broad form)**

In some companies a broader coverage is given, for "professional services rendered or which should have been rendered" in place of the more specific terms above.

(2) Incorporation of the medical society so as to limit the individual liability.

(3) Legislative relief in the form of a law which gives specific protection to persons involved.

The California Legislature passed such a law in 1963. (California Civil Code s43.7). More recently a similar law was passed in South Dakota (CH. 151, 1966). The California law is as follows:

There shall be no monetary liability on the part of, and no cause of action for damages shall arise against, any member of a duly appointed committee of a state or local professional society, or duly appointed member of a committee of a medical staff of a licensed hospital (provided the medical staff operates pursuant to written bylaws that have been approved by the governing board of the hospital), for any act or proceeding undertaken or performed within the scope of the functions of any such committee which is formed to maintain the professional standards of the society established by its bylaws, if such committee member acts without malice, has made a reasonable effort to obtain the facts of the matter as to which he acts, and acts in reasonable belief that the action taken by him is warranted by the facts known to him after such reasonable effort to obtain facts. "Professional society" includes legal, medical, psychological, dental, accounting, optometric, and engineering organizations having as members at least a majority of the eligible licentiates in the area served by the particular society. The provisions of this section do not affect the official immunity of an officer or employee of a public corporation.

This section shall not be construed to confer immunity from liability on any professional society or hospital. In any case in which, but for the enactment of the preceding provisions of this section, a cause of action would arise against a hospital or professional society, such cause of action shall exist as if the preceding provisions of this section had not been enacted.

In its original concept the California law was introduced to raise professional standards with resultant protection of the public. Its purpose was to encourage review procedures which would raise the quality of medical care, and thereupon in the long run benefit sick people.

To date the laws have not been tested in the courts of the states by which they were passed. Until there is a test in the courts by the filing of a lawsuit, they will provide a much needed safeguard if committees are to be effective. It may be anticipated that a court case would justify the effect of the law.

COMMENTARY UPON THE LAW

BY THE ATTORNEY

Statutes such as that under consideration fall into the general category of class legislation. As such, they seem to have certain legally genetic infirmity potential. The protective statute as it stands is substantially all one sentence which, at the outset, makes it a maze of semantics. It has pitfalls, false walls, and traps in the floor.

It appears to say that money damages cannot be collected, that no one can start a law suit for damages against the various persons named, and at first blush suggests a formidable protective wall. But like a breech delivery, sometimes statutes are put together backwards.

The first portion of the law states that there shall be no money damages given against the indicated persons. Then the statute sets forth a series of circumstances to be determined which appear relatively limited in scope and perhaps could be determined by a court as a matter of law. But the remaining circumstances appear clearly as questions for a jury. Thus, legislation such as this does not prevent a physician from being sued in an individual capacity.

The first series of circumstances cover "whether or not" situations: Is the physician a "member" of a "duly appointed" "committee" of a "state" or "local" "professional" "society" or a "duly appointed" "member" of a "committee" of a "medical staff" of a "licensed hospital." Each of the quoted words or phrases covers a rather limited yes or no situation. As applied to a "duly appointed member of a committee of a medical staff of a licensed hospital" there is then the additional question of whether the medical staff operates "pursuant to written bylaws" which have "been approved by the governing board of the hospital." This involves relatively limited factual scope.

However, assuming the physician defendant crosses all of these hurdles satisfactorily, he is then faced with a broadening of determination to have decided whether the act or proceeding he undertook or performed was within the "scope of the function of any such committee" which is "formed to maintain" the "professional standards of the society established by its bylaws." Matters such as this begin to rapidly di-

gress from simple yes or no situations. What is the "scope" of such a committee; what are its limitations; why was it formed; does it overlap with any other committee? What professional standards of the society were in fact established by its bylaws? Here the physician may find the bylaws of his society sadly lacking when viewed with this type of legislation in mind.

Since the protection pertains to "professional society," how does one show that "at least a majority" of the "eligible licentiates" are included. And, what is the "area served" by the particular society. These last requirements are certainly not susceptible of simple proof, especially if there happens to be any dissension in the ranks. If a physician or a group of physicians are expelled from the organization because of mis-conduct, are they included in determining the majority of eligible licentiates? And, who determines the eligibility?

Perhaps it is specifically cogent to point out that the thrust of this legislation is directed toward an **act** or **proceeding** and makes no mention of an **omission**. The statute gives protection for acts done or proceedings taken if the balance of the conditions are met. There appears to be no like protection if damage results from the failure to act or proceed.

But again assuming the circumstances pass legal scrutiny to this point, the lawyer is presented with a formidable task: The act done must be without malice; there must be reasonable effort to obtain facts; the physician must act in reasonable belief on the facts. From the wording of the statute, all three of these must be shown to obtain the benefit of the protective cloak.

The physician must have acted **without malice**; this term has legal technical significance and involves a question of fact for a jury. It must be shown that the physician has made a **reasonable effort to obtain facts**, a jury question. In addition, the physician must show that he **acted in reasonable belief that the action taken by him was warranted by the facts**. This is a jury question. In litigation for monetary damages, the plaintiff characteristically exercises his right to a trial by jury of fact questions. This may be given to him by constitutional provisions of his state or by the statutes of his state.

In most states the rules of procedure governing civil law suits provide for determination of certain fact questions before trial by what is called pre-trial discovery. Utilizing such procedures the first "whether or not" facts probably can be determined and agreed upon between

counsel for the parties and perhaps there could even be a determination before trial of the scope of function of a committee, the nature of the professional standards and the effect of the bylaws. But the group of circumstances involving "malice", "reasonable effort", "reasonable belief", fall into the technical arena of trial by jury.

In an actual lawsuit, utilization of legislation such as this by the defense at the pre-trial discovery technically could result in dismissal of the cause of action in a ruling by the court that as a matter of law under the facts presented to the court before trial there is no cause of action for damages because all requirements of the law have been met. However, it is doubtful if there are many, if any, sets of circumstances which would give this result.

Another unanswered question is that of who has the burden of proof? Is it up to the physician to show that all of the requirements of the statute have been met and he thereby gains its protection, or is it up to the plaintiff to show by his evidence that the protective requirements have not been met?

Since this is a type of class legislation the defendant must plead the statute as what is called an "affirmative defense." That is, he must say to the court that because of the existence of this statute he is entitled to its protection. It would appear that the burden is on the physician to show that he has met the requirements. In effect he says: Here is the statute and I have complied fully with it and, therefore, there can be no recovery of monetary liability.

Is this type of legislation valid? The presumption is in its favor as expression of public policy by the legislature. Those who seek to invalidate it have a heavy burden of proof. But good, bad, or indifferent, the statute does not protect the physician against being sued nor being required to present in open court evidence that he has met the statutory requirements and is entitled to the legal shelter.

The person claiming damages is still entitled to his day in court. We do not comment here upon the advisability of jury trials except to point out that where a constitutional right is destroyed for one purpose, it is not reincarnated for another.

SUMMARY

With the increasing complexity of medical care and the problems attending executive committees, credentials committees, and utilization committees of hospitals and local medical societies, some means to insure the protection of the best interest of the patients is sorely needed. Physicians in executive or potentially disciplinary capacities must have a means of legal shelter if they are to do the best job possible in the impartial, conscientious, exercise of their office in good faith, without fear of unjust reprisals. This protection can be in the form of insurance, incorporation of the society when applicable, or by legislative relief. Laws have been passed by the legislatures of two states but to date they have not been tested in the courts. It is conceivable that similar laws may be passed in other states in the future.

The law as it stands in California and South Dakota is not perfect but it is the best available and could help everybody. The law does not protect the competent professional where he is unable to operate with a medical staff because of the nature of the community; where he doesn't have a hospital to operate in and therefore no bylaws. It doesn't protect the man who tries to raise the standards of the profession but can't meet the statutory requirements. This law was originated in California where medicine is highly organized. South Dakota is primarily a rural state and the requisites of the law may fail in the smaller hospitals. It eventually could be reworked so as to improve the rough points.

Where it is available the physician should operate under the law on the assumption that it is an expression of policy by the legislature (legislative intent) that will protect a man who is trying to raise his professional standards in an honest, careful, ethical manner.

Path C A P s u l e

Submitted by the College of American Pathology in connection with the South Dakota Society of Pathologists.

URIC ACID

Uric acid is a purine compound found in human red cells and plasma, the concentration in plasma being about twice that of the red cells. Uric acid is the principal end-product of purine metabolism in humans and apes, but other mammals further oxidize the compound to allantoin. There are three sources of the uric acid found in human serum: ingested nucleoproteins (purine derivatives), degradation products of nucleoproteins in cellular material, and synthesis from simple chemical precursors.

The site of uric acid synthesis in man is not definitely known. It is formed from glycine, nitrogen from other amino acids, formate and CO_2 . The bone marrow, liver and gastrointestinal tract all have a high turnover of nucleoprotein and are probable sites.

Uric acid is excreted chiefly in the urine in the amount of 0.4-1.0 gram daily¹. This is derived largely from both the exogenous variety originating from nucleins of food and the endogenous variety produced by metabolic destruction of nuclei of the body. It is excreted in the form of sodium and potassium urates and as uric acid. In concentrated urines amorphous urates and crystals of uric acid may be found. These are normal components and are not to be considered evidence of increased uric acid excretion.

NORMAL VALUES:

Adult males	3.5 to 6.0 (average 5.1) mg per 100 ml.
Adult females	2.9 to 5.0 (average 4.1) mg per 100 ml.
Children up to puberty	2.1 to 3.9 (average 3.3) mg per 100 ml.

LOW VALUES have no clinical significance, and may be found after administration of A.C.T.H. and uricosuric drugs (which include aspirin).

HIGH VALUES are found in any condition where there is either a decreased excretion, an increased production, or a decreased destruction of uric acid. Some of these conditions are:

1. **Gout** is the most common disorder of purine metabolism. Only 2% of gouty patients have serum uric acid values below 6.0 mg%. Serial determinations are sometimes necessary to establish a diagnosis. A **diagnosis of gout should not be made solely on the basis of a laboratory determination**, without other evidence such as physical findings and family history.

While it is true that a high uric acid value is almost always a constant finding in gout, all patients with moderate elevations above 6.0 mg% do not have this disease. Currently, the significance of increased values in these patients is not clear and it is well to follow such individuals with repeated uric acid determinations. Urate crystals may be deposited about joints and in kidney parenchyma producing renal insufficiency. It is not known if high uric acid values found in these patients are due to deficient elimination or increased production of uric acid. Apparently there are two types of gouty patients, those with an abnormally high basal uric acid excretion and those with a normal excretion. There is some evidence that there may be increased production in the former group.

2. **Relatives of patients with gout** frequently have asymptomatic high serum uric acid values. This is apparently on the basis of a genetically inherited characteristic.

3. **Excessive destruction of nuclear material** which occurs in leukemia, polycythemia, starvation, resolving pneumonia and toxemias of pregnancy frequently cause high uric acid values. Serial uric acid analyses are of value in estimating prognosis in toxemias of pregnancy. A steady and progressive rise is one of the indications for interrupting the pregnancy.

4. **Kidney dysfunction of various types** causes high uric acid values because of decreased elimination. There is no uniform correlation, however, between the serum concentration and the severity of kidney damage. Consequently, uric acid determinations should not be used for estimating the extent of renal impairment. The retention of urea and creatinine appear earlier, are more marked and are of greater value in diagnosis and prognosis.²

5. **Other High Values:** A dilemma, which confronts the physician and which is seen all too frequently, is the high uric acid value in patients who appear to be well. As previously stated, an elevated value does not make a diagnosis of gout mandatory. It is seen as a transitory finding in patients who have ingested large amounts of nucleoproteins that are present in liver or sweetbreads. Patients, particularly if obese, who are on high protein diets for weight reduction may show quite high values. Renal disease, blood dyscrasias, medication of various sorts and coffee consumption in the hours preceding the test can be related to high values. A substantial number of abnormal values, however, remain unexplained.

(Continued on Page 52)



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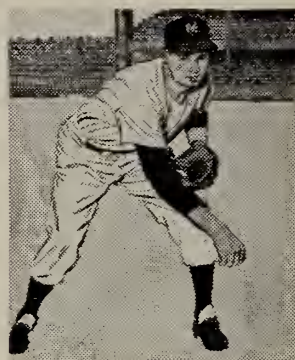
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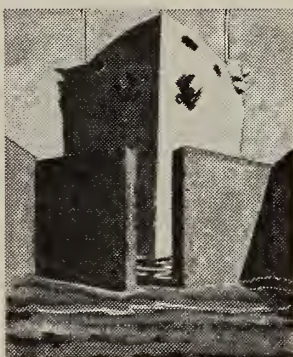
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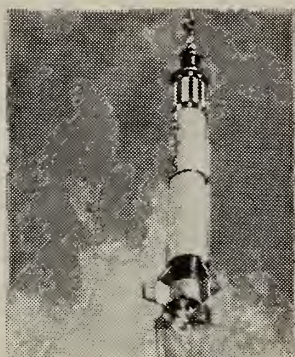
1953: Dr. Salk develops polio vaccine.



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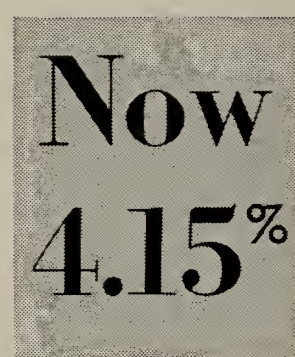
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COMMENTARY

From

THE UNIVERSITY OF SOUTH DAKOTA SCHOOL OF MEDICINE

Edited by: Dr. Charles R. Gaush, Publications Committee



MEDICAL SCHOOL DINNER DANCE

The annual Medical School Dinner Dance, sponsored by the SAMA, was held at the Sheraton-Cataract Hotel in Sioux Falls on April 8. The featured speaker was Dr. John H. Lawrence, Director of the Donner Laboratory at the University of California, who spoke on "Present Examples and Future Possibilities of Nuclear Medicine in Research, Diagnosis and Therapy."

Prior to Dr. Lawrence's presentation, more than \$7,300 in prizes, scholarships and awards were given to freshman and sophomore students as well as incoming freshman students. The recipients of these awards were:

- Norman Neu:**
Charles Pfizer Award
Lang Book Award
- Wesley Putnam:**
Huron Clinic Award
Shaw Medical Student Award
Lang Book Award
- Gerald Evans:**
Nakao Scholarship
- Terrence Pfeiffer:**
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Yankton Clinic Award
- James Reynolds:**
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Hoffman-LaRoche Award
- William Hanking:**
Payne Scholarship
Medical Faculty Award
Mosby Book Award
- George C. Roth:**
Christian P. Lommen Award
Kreiser Medical Scholarship
Mosby Book Award
- Walter K. Sosey:**
Wm. E. Edwards Award
Arnold Pritchow Award
Mosby Book Award
- Robert W. Block:**
J. A. Kittelson Award
Meisenholder Award
Mosby Book Award

Charles L. Parks:

Yankton Clinic Award
Kreiser Memorial Award
Mosby Book Award

Rodney Parry:

South Dakota Medical Assoc. Award
Lang Book Award

Leon Schwartz:

Eldridge Memorial Award

Raymond Townsend:

WA-SAMA Award

Henry J. Fee:

Lang Book Award

John Carter:

Merck Award

Jerald Bratberg:

Price Award in Anatomy

AWARDS TO INCOMING FRESHMEN:

Marie C. Dunn:

Avalon Foundation Scholarship

Michael Scarmone:

South Dakota Medical Assoc. Scholarship

Martin Hanneman:

Lyle J. Hare Scholarship

Several members of the faculty were also recognized at the award ceremonies. Drs. Karl H. Wegner and John F. Barlow were given the Distinguished Professor Award for exemplary teaching. Drs. Joseph D. Welty and Finley D. Marshall received the Brookings Clinic Award for outstanding service to the Medical School. Also recognized for their services to the Medical School were Drs. George W. Knabe, Jr., Warren L. Jones and Mr. Earl F. Bihlmeyer.

PHOTO CONTEST WINNER

We have just been informed that Mr. Carroll D. Isburg, freshman medical student from Yankton, won 2nd prize for photomicrography in the 9th Annual Medical Art Competition. This competition is sponsored by the SAMA and Eaton Laboratories, Division of Norwich Pharmaceutical Company for outstanding work in medical photography, photomicrography and medical illustration.

Mr. Isburg's entry was a color photograph of human erythrocytes stained by the indirect fluorescent antibody technique and was taken on Kodak High Speed Ektachrome film with a

Leitz-SM Fluorescence Microscope. Second prize for photomicrography in this national competition was a \$150 award and a trophy.

DR. CRITZ LEAVES USD

Dr. Jerry B. Critz resigned his position as Associate Professor of Physiology and Pharmacology to accept an appointment as Associate Professor of Physiology at the University of Western Ontario School of Medicine. Dr. Critz, who received his Ph.D. from the University of Missouri, joined our staff in 1961 and carried out research on serum enzymes and their role in cardiovascular incompetence.

TOCAR SWIM-TRAINER

A new product of interest to parents is the Tocar Swim-Trainer which makes it possible for anyone to train babies and small children to swim. The Swim-Trainer is so simple that anyone — even a non-swimmer — who can follow simple instructions can train a baby to swim.

The Swim-Trainer is constructed of detachable molded blocks of expanded, flecked, white polystyrene. The blocks are strapped together to form a unit measuring approximately 9" x 6" x 4". One block has a web or plastic strap attached for fastening the unit to the child's back.

The instructor progressively removes individual blocks from the Swim-Trainer during a series of training sessions. The child learns to compensate for the gradually decreasing flotation. When all blocks are eventually removed, the child can swim independently.

The Swim-Trainer complete with instructions costs \$3.50 each postpaid. Tocar, Inc., P. O. Box 55309, Houston, Texas 77055.

MEDICAL TOUR

A matter which may be of interest to South Dakota physicians is an official tour sponsored by the Ministry of Health of the U.S.S.R., in connection with the 2nd International Symposium on Medical Treatment in Spas and Physiotherapy. Participation is open to all members of the medical profession, regardless of their specialty.

The tour is scheduled to leave New York on Wednesday, August 30th and return to New York on Monday, September 18th. The tour rate is \$865 per person, which includes such items as air transportation (in cooperation with Pan American World Airways), hotel accommodations, meals, transfers, sightseeing, baggage al-

lowance, service & taxes. The \$10 registration fee for the Symposium is not included, nor is the cost of passport, visa fees and processing.

A deposit of \$100 per person is required on travel arrangements at time of registration. Further details and a brochure may be obtained by writing **Compass Travel Bureau, Inc.**, 55 West 42nd Street, New York, New York 10036.

(Continued from Page 49)

Indications for the Test: The level of the serum uric acid should be determined whenever gout is suspected. In toxemias of pregnancy repeated determinations aid in following therapy and in estimating prognosis.

Material needed for the Test: Serum 3 ml.

REFERENCES

1. Davidsohn & Wells, **Clinical Diagnosis by Laboratory Methods**, 13th Edition, p. 28.
2. Miller, **A textbook of Clinical Pathology**, 6th Edition, p. 246.



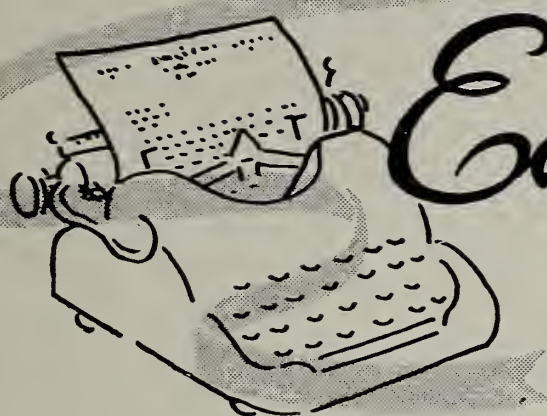
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Editorial

A NEW ROLE FOR BLUE SHIELD

Physicians are looking to Blue Shield to fill a new role.

Title 18 of Medicare covers some 20 million people. Title 19 will eventually cover another 35 million. Millions more are, or will be, covered under various other government programs.

It has been estimated that by 1975, more than 25 percent of Americans will have their health care covered by some form of governmental program.

H. Russell Brown, M.D., chairman of the AMA committee on insurance and prepayment, has said that medical associations must recognize that the federal government is now becoming a massive third party payer in the medical care field.

"This insurer," he said, "is in a tax-supported position in competition with all other insuring organizations. Therefore, individually and collectively we must carry on negotiations regarding financial as well as other relationships with government either directly or indirectly."

He went on to say: "Rather than to deal (with the government) directly and segmentally by county and state medical societies, it would appear far better to utilize our companion organization — Blue Shield — as a buffer between government and the physician. Thus the technical personnel and knowledge of the Blue Shield organization in this field can be utilized to carry on negotiations, to perfect procedures, and to serve as contractor and administrator.

"If this new role for Blue Shield is to be accomplished, physicians and medical societies must actively promote and develop closer relationships with the Plans they sponsor."

It is imperative, he continued, that, at this point in time, conflicts between individual physicians and/or medical societies and Blue Shield must be resolved. He indicated that medical societies at all levels should consider seriously taking positive action to request Blue Shield to assume the role of a negotiator between them and government.

It is a difficult road, a treacherous road for Blue Shield to negotiate. Yet, Blue Shield willingly accepts this difficult assignment as its contribution to preserving the free practice of medicine.

Letters to the Editor

University of South Dakota
School of Medicine
March 31, 1967

Mr. Richard C. Erickson, Ex. Sec.
S. D. State Medical Association
711 North Lake Avenue
Sioux Falls, South Dakota 57104
Dear Mr. Erickson:

Within the last week, it has come to the attention of our SAMA Chapter that the Council of the State Medical Association, in addition to renewing its three annual scholarships, has awarded \$200.00 to be directed toward defraying the expenses of our student delegates who will attend the National SAMA Convention in Chicago this coming May. Please express our thanks to the Council for this financial help; we really appreciate this gesture of the State Association's continuing interest in our SAMA Chapter.

Sincerely,
Sandra Jassmann, Secretary
Student American Medical Association

SJ/da

University of South Dakota
School of Medicine
April 17, 1967

Richard Erickson
South Dakota Medical Association
711 North Lake Avenue
Sioux Falls, South Dakota 57104
Dear Dick:

Received your letter of April 11, 1967, with the lovely check for \$5,061.94 representing the USD Medical School share in AMA-ERF contributions for 1966. As you well know this annual contribution has considerable significance in the operation of this medical school. We will of course acknowledge this check to Dr. Blasingame, but we thought it also appropriate to thank our local medical association representatives. I trust you will convey this feeling of appreciation whenever the occasion may arise.

Sincerely yours,
Earl F. Bihlmeyer
Administrative Assistant

EFB/dl

Mrs. Schlosser
South Dakota State Medical Association
711 North Lake
Sioux Falls, South Dakota
Dear Mrs. Schlosser:

During the past year, perhaps you have noted that there have been included as a more-or-less regular feature Clinical Pathological Conferences from Sioux Valley Hospital. We who are writing these articles would like to know from the practicing physicians of the state whether these are considered worthwhile as a continuing feature and whether they are of any practical value. Your comments will be appreciated.

Sincerely,
J. F. Barlow, M.D.
Pathologist

Mr. Richard C. Erickson
Executive Secretary
South Dakota State Medical Association
711 North Lake Avenue
Sioux Falls, South Dakota
Dear Mr. Erickson:

The award established by the State Medical Association and given to me at the Medical School dinner is greatly appreciated as is the interest displayed by the South Dakota physicians in their medical students.

At the present time I am enjoying an excellent educational experience in Aberdeen.

Thank you very much.

Sincerely yours,
Rod Parry

Richard C. Erickson, Executive Secretary
South Dakota State Medical Association
711 North Lake Avenue
Sioux Falls, South Dakota
Dear Mr. Erickson:

I wish to thank you for the State Medical Association scholarship. You are no doubt well aware of the high cost of a medical education and thus you are able to understand my appreciation of the award.

Sincerely,
Curtis L. Mark
Freshman Medical Student
Vermillion, South Dakota

ANNOUNCEMENTS

An intensive training program in Cardiology is offered by the full time staff of the Institute for Cardiovascular Disease, Good Samaritan Hospital, Phoenix, Arizona. This is an intensive academic effort covering the U.S.A. and abroad. The fellows will be trained specifically in the areas of: clinical care, intensive coronary care unit, electrocardiography, vectorcardiography, phonocardiography, apex cardiography, cardiovascular pathology, cardiovascular surgery, cardiac catheterization, selective angiography and clinical investigation. Experimental cardiovascular physiology, medical electronics, and statistics are also part of the program on an elective basis.

Stipend — \$7,000.00.

For information write: A. Benchimol, M.D., Director, Institute for Cardiovascular Diseases, Good Samaritan Hospital, 1033 East McDowell Road, Phoenix, Arizona 85002.

“Basic and Clinical Aspects of Therapy in Advanced Cancer,” October 16-21, 1967. University of Wisconsin Medical Center. The purpose of this course is to demonstrate the practical clinical application of laboratory science discoveries in anti-cancer therapy. For further information on the course, contact R. J. Samp, M.D., Cancer Program Coordinator, University Hospitals, Madison, Wisconsin 53706.



“BOOM-BOOM! BOOM-BOOM!
BOOM-BOOM! —”



Dr. Irving S. Wright (right), president of the American College of Physicians, and Howard W. Baldock, director of medical relations for Squibb, are shown at the exhibit.

A collection of twenty original oil paintings of the oldest medical colleges of America was on view during the recent annual meeting of the American College of Physicians in San Francisco. They represent the first of a growing collection that is part of the “Collegia Medica” program established in 1965 by E. R. Squibb & Sons, Inc.

The “Collegia Medica” program is a long-range plan to create a collection of original paintings of the medical colleges of America. Two paintings of each college are rendered by an outstanding artist chosen, whenever possible, from the area in which each school is located. One is presented to the dean for permanent display at the institution. The other becomes part of a Squibb collection to be displayed periodically throughout the United States.

The program will continue until representative paintings of each medical school have been completed. There are, at present, 86 accredited, four-year schools of medicine in the United States.

Symposia on Iron Storage, Colitis, Among Scientific Programs at AMA Annual Convention

Symposia of interest to both the generalist and the specialist will be included in this year’s Scientific Program of the American Medical Association’s Annual Convention.

The Convention will be held in Atlantic City June 18-22, the Scientific Program in Convention Hall and surrounding hotels and the House of Delegates at the Chalfonte-Haddon Hall Hotel.

A Symposium on Absorption and Storage of Iron will be presented as a joint meeting of

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the Sections on Pathology and Physiology, Internal Medicine, Experimental Medicine and Therapeutics, and Gastroenterology.

The Sections on Radiology, Proctology, Pediatrics, General Surgery, Internal Medicine, and Gastroenterology will join for a Symposium on Granulomatous Colitis and Ulcerative Colitis in Children.

Other symposia are being planned and scheduled.

The entire Scientific Program for the 1967 Annual Convention was published in the May 8 issue of the Journal of the American Medical Association.

THE MONTH IN WASHINGTON

The American Medical Association proposed that Congress set up a National Commission on Health Resources and Medical Manpower with broad powers to supervise the drafting of physicians for military service.

The AMA recommendation was presented by Dr. Albert H. Schwichtenberg, chairman of the AMA Council on National Security, at a Senate Armed Services Committee hearing on S. 1432 which would provide for a four-year extension of the present draft law expiring June 30.

Other AMA recommendations for modification of the doctor draft program included:

—Expansion of the physician draft pool to include women doctors.

—Making subject to draft call foreign physicians under 35 years of age, with permanent visas or who have subsequently become citizens, and who may not be subject to call because they were not deferred from induction while under age 26.

—Limiting credit for fulfillment of the draft obligation to only service performed in the armed services. (Under the old law, service in the Public Health Service could satisfy a physician's obligation for active military duty.)

—Routine transfer, upon completion of an internship, of the jurisdiction of physicians to the local draft board serving the area in which the physician is engaged in training or practice.

—Changes in the pay and promotion policies for military physicians designed to increase the retention of career military physicians.

"Our primary recommendation . . . is the creation of a National Commission on Health Resources and Medical Manpower," Dr. Schwichtenberg said. "This Commission would replace and be responsible for the functions of the present National Advisory Committee and the Health Resources Advisory Committee. This

new Commission, under the direction of the President, would have the responsibility of maintaining a proper balance of health personnel, within existing resources, among the Armed Forces, other Government agencies, and the civilian population. Requests of the Secretary of Defense for health manpower in the military would be reviewed and approved by the Commission. The Commission would establish for the Selective Service System criteria for classifying, reclassifying and determining the order of selection for health personnel. Under this proposal, the present State Advisory Committees would be redesignated as State Health Manpower Committees, whose activities would be coordinated by the National Commission. It is further recommended that the Commission should be constituted from among persons of outstanding national reputation in the health-care fields, and its composition should include substantial representation from physicians in private practice.”

* * *

The National Highway Agency announced tentative standards for emergency medical services provided for persons injured in traffic accidents.

The federal standards give the states broad authority in implementation and also are subject to comment by the states before they become final. The state programs must be in full operation before Jan. 1, 1969, or a state could lose up to 10 percent of its allotted federal highway construction funds.

Although the federal standards apply only to traffic accidents, they are expected to necessarily set a pattern for emergency medical services generally.

Dr. William Haddon, Jr., head of the National Highway Safety Agency, said the emergency care regulations are designed to provide quick response to accidents, sustain and prolong life through proper first aid measures, reduce the likelihood of permanent disability and prolonged hospitalization, and provide speedy transportation of accident victims to hospitals.

The federal standards would require states to:

- Appoint a full-time medical emergency services coordinator to have primary responsibility for the program.
- Prepare a comprehensive plan for emergency services throughout the state.
- Establish training, licensing and related requirements for ambulance drivers, attendants, and dispatchers.

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—Coordinate ambulance and other emergency medical care systems, including requiring ambulances to carry two-way radios hooked up with the police and hospitals.

—Provide first aid training and refresher courses for emergency service personnel and policemen and firemen, and encourage first aid instruction for the public.

Other draft regulations with medical aspects:

—Make physical and eyesight examinations for driver licensing.

—Do compulsory blood tests for alcohol on drivers in accidents.

* * *

Dr. John C. Nunemaker, chairman of the American Medical Association's Department of Graduate Medical Education, told a House Judiciary Subcommittee that the AMA's position continues to be that graduates of foreign medical schools who come to the United States for training "should be encouraged in every possible way to return to their home countries where their skills are so badly needed."

Dr. Nunemaker suggested that the five-year length of stay provision for physicians on exchange programs be reconsidered. Every year beyond two or three years "intensifies the desire of the visitor to stay longer," he noted.



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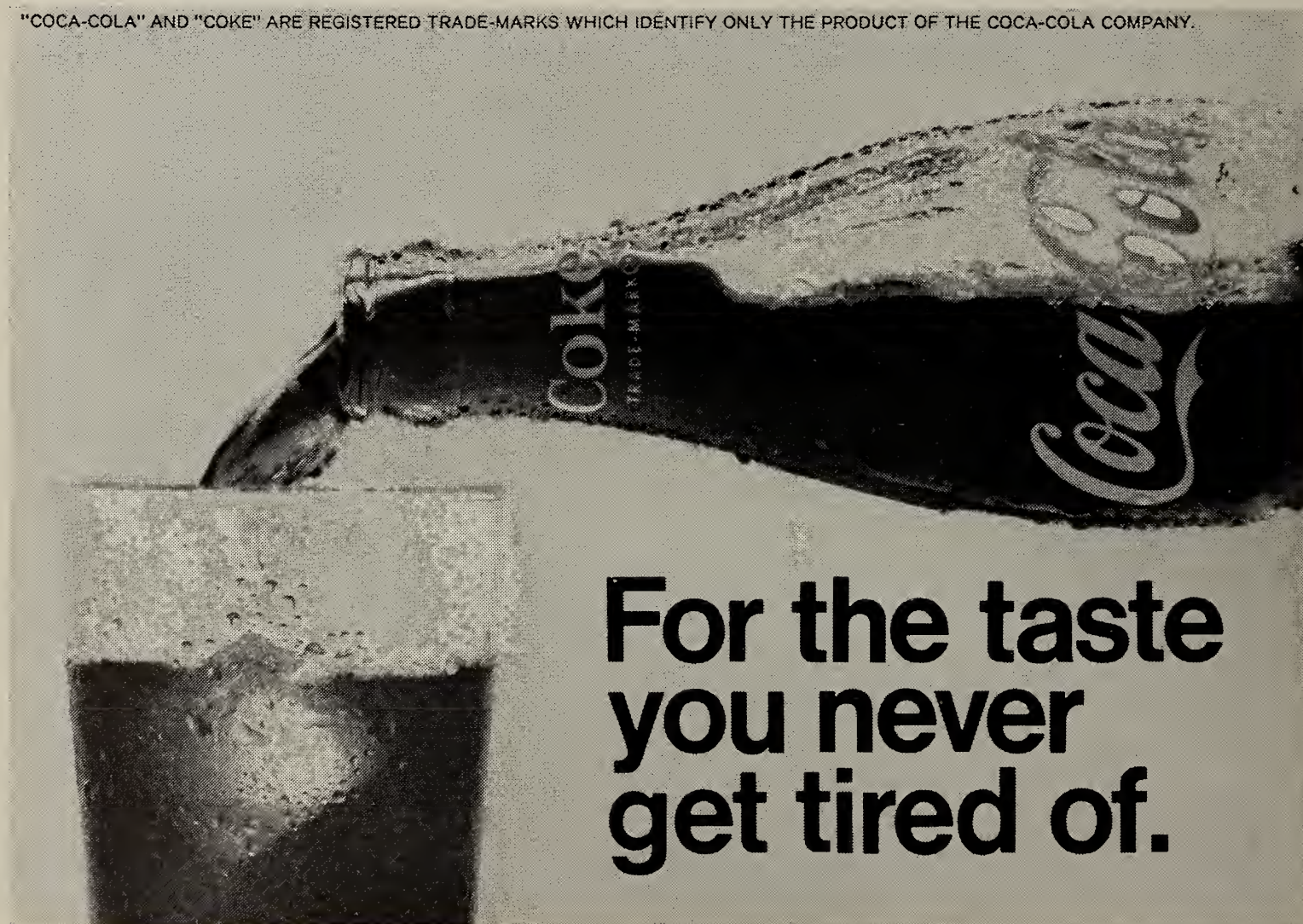
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News Notes • Changes • Births • News

Pop's Proverb

A word of encouragement is often worth more than financial help.

Samuel Rosa, M.D. of the Redfield State Hospital and School recently spoke on research in mental retardation at the Spink County Association of Retarded Children.

* * *

A news story from Lawrenceville, Georgia, about the progress being made in finding better vaccines to treat rabies involved two South Dakotans. The story mentioned that the only reported fatal case of rabies in the United States in 1966 concerned a South Dakota boy (who died in Sioux Falls). (This case was presented in the May issue of the **Journal**.)

The news story mentioned the research of **Dr. R. E. Dierks** of the U. S. Public Health Service. He is formerly of Flandreau, and is married to the former Carol Amundson of Colton, a sister of **Dr. Loren Amundson** of Sioux Falls.

James Daggett, M.D. will establish a medical practice in Lennox, South Dakota beginning July 1st.

Doctor Daggett is presently concluding his internship at Sioux Valley Hospital in Sioux Falls. He will be associated with the Donahoe Clinic in Sioux Falls, but will practice in Lennox on a full-time basis.

Doctor and Mrs. Daggett have three children, and are presently residing in Sioux Falls, but plan to make their home in Lennox soon.

Guest speaker at the April meeting of the Black Hills Medical Society was **Harry H. LeVeen, M.D.**, Chief of Surgical Service, Veterans Administration Hospital, Brooklyn, New York. He is also Professor of Surgery at the Down State Medical Center, State University of New York.

Doctor LeVeen's topic was "Surgical Intensive Care Problems." Following the lecture, time was devoted to questions and a critique on Dr. LeVeen's discussion by Merle M. Musselman, M.D., Surgical Consultant for the Veterans Administration Center.

* * *

An opinion requested by the state's attorney for Potter County on whether or not a municipality can spend public funds to buy a doctor's clinic has been given by Attorney General Frank Farrar.

According to the Attorney General, the city can neither purchase the clinic using public funds nor accept the clinic as a gift.

The city of Hoven was considering buying a clinic owned by a private non-profit corporation with liquor store funds.

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David J. Buchanan, M.D. gave the commencement address at Letcher, South Dakota, on May 10, 1967.

* * *

Eduardo G. Francisco, M.D., Estelline, has been elected to active membership in the American Academy of General Practice.

* * *

Francis P. Kwan, M.D., Rapid City pediatrician, was elected to fellowship in the American Academy of Pediatrics at its recent spring session in San Francisco.

Doctor Kwan took his M.D. at Marquette Medical School in 1957, and interned at St. Joseph's Hospital in Milwaukee, Wisconsin. He served for two years as director of the Bureau of Preventable Diseases and Medical Services at Milwaukee.

His residency in pediatrics was taken at Milwaukee Children's Hospital. He has been associated with the Rapid City Medical Center since July of 1962.

The second annual meeting of the Society for Cryo-Ophthalmology will be held in Miami Beach, January 14 to 18, 1968, with Dr. Jose Barraquer, of Bogota, Colombia, presiding. The program will include a session on retinal surgery, with Dr. Giambattista, of Rome, as the featured speaker. Dr. H. Fanta, of Vienna, will lead the discussion on cryoextraction of cataracts.

Those wishing to present papers at this meeting should submit title and brief abstract to Dr. John G. Bellows, executive secretary, 30 N. Michigan Ave., Chicago, Illinois, 60602, at the earliest possible date.

* * *

Three members of the Sioux Falls Board of Education attended the convention of the National School Boards Association in Portland, Oregon.

Roy Knowles, M.D. was the main speaker at one of 62 spe-

cial interest clinics. He spoke to wives of school board members about their relationship with their communities.

Also in attendance were board president, Rev. Selmer Heen, and **Dr. Paul Reagan**.

* * *

The Tenth Annual Postgraduate Course in Pediatrics will be offered July 31 through August 4, 1967 at the Stanley Hotel, Estes Park, Colorado. The tuition fee for the five-day course is \$80.00, including a registration fee of \$10.00 which is non-refundable. Detailed information on housing accommodations will be sent upon receipt of application or upon request. Further information may be obtained from The Office of Postgraduate Medical Education, University of Colorado School of Medicine, 4200 East Ninth Avenue, Denver, Colorado 80220.

SOUTH DAKOTA

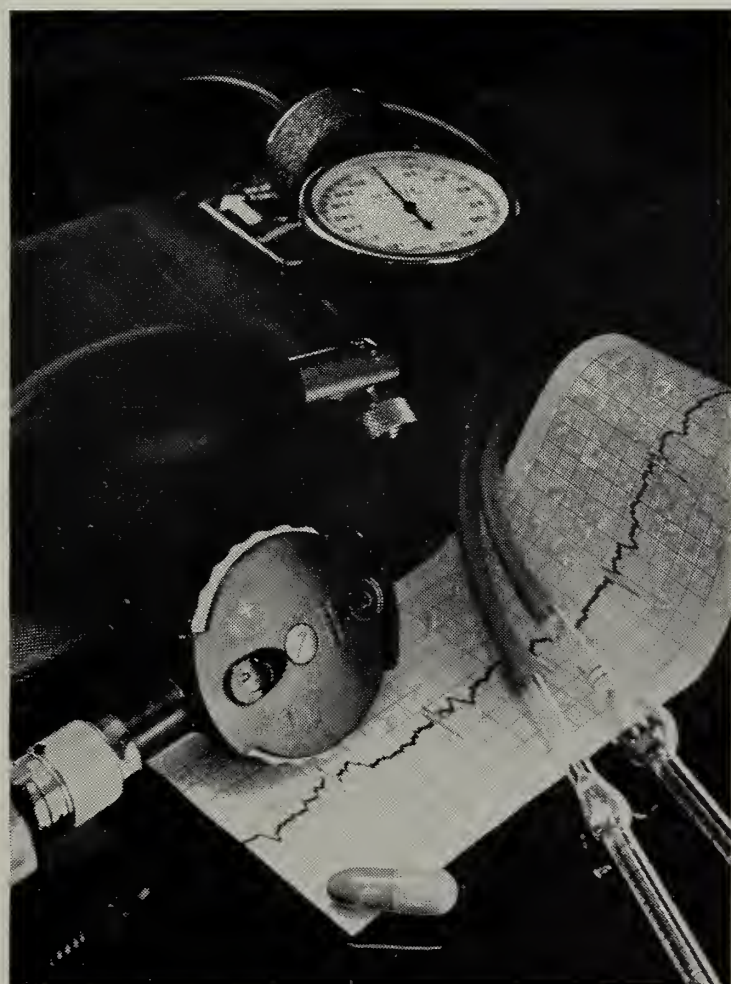
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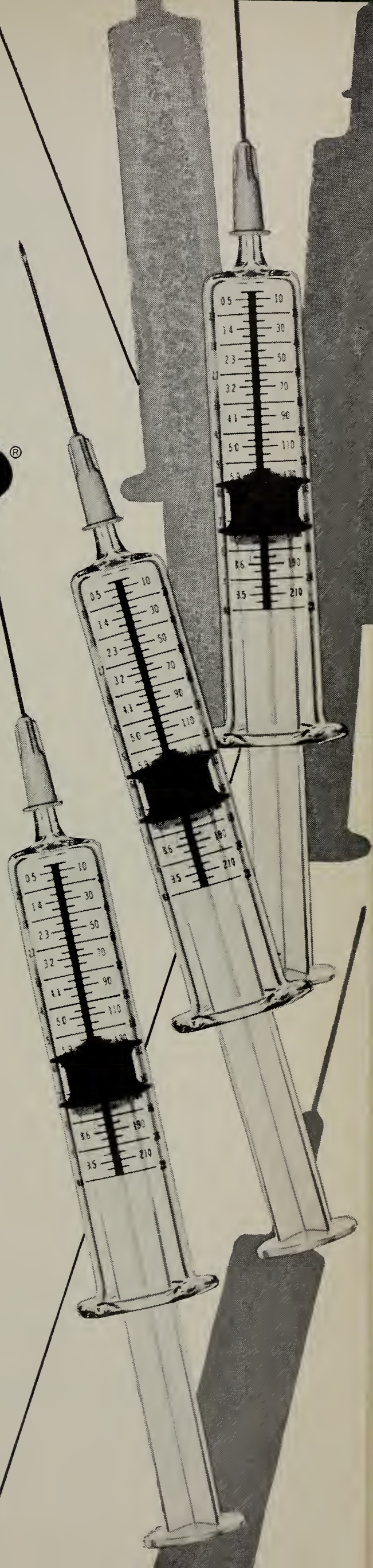
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JOURNAL OF THE SOUTH DAKOTA STATE MEDICAL ASSOCIATION
AND THE SIOUX VALLEY MEDICAL ASSOCIATION

Volume XX

July, 1967

Number 7

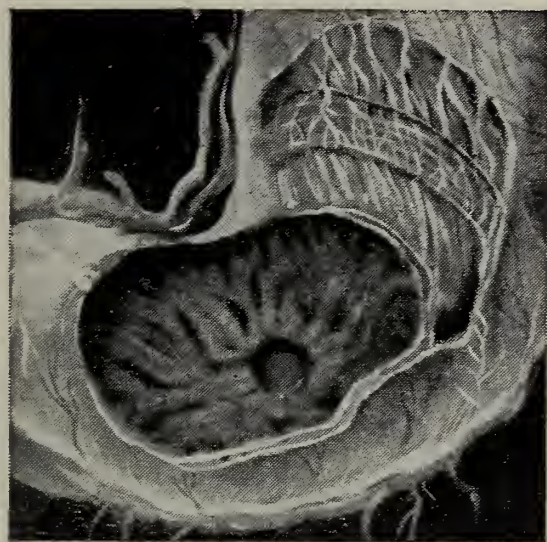
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Scientific PAPER

Editor's Note:

This address by Mr. Mossberg and those of Dr. Johnson and Mr. Hoffman, which follow Mr. Mossberg's address, were given at the Legal-Medical Meeting held in Rapid City on September 10, 1966.

PROFESSIONAL LIABILITY — ITS BASIS AND DEFENSE

W. A. Mossberg

MR. WILLIAM G. PORTER: Commencing the program I would like to introduce to you Dr. Marion R. Cosand, the medical chairman of our joint medical-legal effort. Dr. Cosand.

DR. COSAND: Thank you, Mr. Porter, and ladies and gentlemen. Today we are privileged to have three excellent speakers with us. The first is Mr. W. A. Mossberg. Mr. Mossberg has had considerable experience in the insurance field and this has culminated in his being the regional claims superintendent of the St. Paul Insurance Companies of St. Paul, Minnesota, and at the present time he has charge of Illinois, Michigan, Ohio and Oklahoma. He is graduated from the University of Minnesota with an LL.B. and BS.L. He was in private practice with Meagher, Geer, Markham and Anderson, and he will talk to us today regarding Professional Liability — Its Basis and Defense, handling of claims. Mr. Mossberg.

MR. MOSSBERG: Thank you, doctor, I've been told that speakers at this sort of thing are expected to have a joke or two. It's kind of difficult for me — I only know two kinds — one, too dirty to tell and the other just plain isn't funny, but I did run across something that made me chuckle a little the other day. It concerns a trucking company that was having quite some trouble with their experience and so they decided to hire a safety engineer, and this safety engineer as a part of his routine was testing the

drivers. So he had the driver in and he said "Now I want you to assume you're on a mountain road, you're driving this sixteen axle rig, you've been following a slow moving car and you finally come to a straight stretch that's on a hill and it's about a hundred feet down on both sides and you pull out to pass. Now when you get out in the other lane you see another sixteen axle rig coming up the hill from the other direction, what do you do?" Well, of course, he said he'd slam on his brakes. The safety engineer says "Fine, that's what you'd do but let's assume the brakes don't work, what do you do then?" Well, he thought a while and he says "I suppose I'd wake up George." He says "Who's George?" "Well, he's my relief driver, you know. He's back there in the sleeper." "Well, yeah, I suppose you would wake up George but what good does that do?" He says "Well, I don't know, but George ain't ever seen a real good accident."

I feel kind of out of place here, I've taken this week off and I've been working at home laying a stone wall. If there's a stonecutters' convention across the street I think I should go over there.

A talk to a group such as this is rather difficult. You have to talk over some and under the rest. Unfortunately between doctors and lawyers there's too little common ground. Lawyers really don't understand the problems of the doctor. Doctors, ordinarily, have an amazing lack of understanding of legal principles.

I'm going to talk primarily to the doctor. Some of the attorneys here may feel offended because they feel I am talking in trite matters, but I ask that you bear with me. Among various things I'm not going to do, I am certainly not here to put on some kind of a school to teach attorneys how to win malpractice cases. I have

purposely stayed away from case citations. I'm sure that the speakers to follow will fill in this void quite ably.

One thing that continually comes to my attention is the failure of attorneys to get down to basic propositions. We hire lawyers; we hire a lot of them. We have a lot of them working for us in the insurance company and it's surprising to see how often the real issues in a case are ignored by these people who we would hope understand what's involved. I have a case right now in which our insured left a disabled vehicle on the highway and this vehicle was run into. There were some very serious injuries. The physical facts are quite clear; we know where the vehicle was left, we know how the accident occurred. Among other things, it's alleged that our man was quite drunk. I believe he was, frankly. Our adjuster, who is a lawyer, spent all of his time investigating this issue of intoxication. He followed the man's activities — he really did a fine job of investigating this and he has put together a pretty good case to prove that he was not drunk. Well, unfortunately, this doesn't do anything. This man has wasted his time really; he's been investigating an immaterial issue in this case. The controlling issue here, of course, is where was this vehicle? Whether the man was drunk or sober when he left there really didn't make any difference. This, unfortunately, is the approach that's taken regularly by attorneys and doctors in considering professional liability.

Consider the automobile driver who crosses the center line and hits an oncoming car. Ordinarily you would say that this man is liable to the owner and occupants of the other car. Why? Is it because he was on the wrong side of the road? Well, yes, of course, that's so. But this isn't the real legal issue. The plaintiff's attorney in this case proceeding just on this issue may come up with nothing because there may be a justification for being on the wrong side of the road. Looking at the results, looking at the final set of facts, is not the issue involved.

Consider the owner of property. Somebody falls down and he's hurt. Now is the owner liable to this person who falls down and gets hurt because he owns the property? Well, again, yes, this is an element but this isn't the controlling issue.

I think it will profit the attorneys, as well as the doctors, to go back to fundamentals and consider where legal liability comes from. It comes from a violation of duty. Every person has a duty to every other person. This is basic law

but it's so often overlooked. Sometimes this duty is purely negative. The duty that you as a property owner owe to, say a burglar who's trying to break into your house, is strictly a negative duty.

The motorist has duties to all other persons using the highways. He has a duty to maintain control of his vehicle, maintain the vehicle in a safe condition, generally act as a reasonable and prudent person, but, this doesn't mean that anyone who is injured by this motorist is entitled to recover. It means that if this man has violated his duties then legal liability attaches. This motorist that's on the wrong side of the highway, if he is out there because he was hit by someone else and pushed onto the wrong side of the road, doesn't owe the oncoming car. Now time and again I see this type of thinking, not only by doctors, if you please, but lawyers as well. They look for the result and they say that because of the result there's liability. Well, it just isn't so.

A very common misconception among lay people is this business of who hits who in a car accident. Suppose you have a multiple car rear-ender. Somebody stops because of an obstruction and the next car either stops or comes close to stopping, somebody down the chain finally ends up hitting the car and you have your chain reaction of bump, bump, bump. So often the only question that anybody asks is "Who hit me?" Then, he owes me because he hit me, without considering what this man either did or failed to do to supply the basis of liability.

In the fall-down case on property, this owner of property may have leased the property away and as lawyers you all know that in that arrangement the tenant takes the property as he finds it. If this claimant happens to be the tenant and the condition that caused him to fall pre-existed the lease, there is not liability. The question isn't who owns the property, the question is who did something wrong. In professional liability it isn't the bad result, it isn't the unfortunate occurrence that supplies the basis for legal liability. You'd have to go back as in the auto case or the fall-down case and say "Who did or didn't do what they were supposed to do?"

In the case of the claims against doctors, you consider the duty that the doctor has to the patient. Well, what is it? First of all he has to be qualified for the position that he purports to hold. He has to qualify under the basic sciences law if you have one. He has to have the education, the training, the skill that a person in his

profession ought to have. He has to use those skills and that learning according to the standards of the community in which he practices. He has to observe the personal rights of the patient. For instance, assault claims, civil rights claims, that sort of thing. He has to perform as he has contracted to perform. Of course he has to observe all the laws that are applicable to every other person outside of his professional duties. For instance, he must not conspire to deprive someone of his property or rights.

Skill and learning is fairly easy. We ordinarily don't find someone professing to be a doctor who is not. If the man has graduated from medical school, if he is licensed to practice in the state, generally speaking, the law will recognize that he has the skill and learning that is required of him.

Now using that skill and learning in conformance with the community standard is quite another thing. What is the community standard? This is a factual question to be decided in each individual case and it is a question that has to be proved by expert testimony. Unfortunately, when attorneys have a professional liability claim against a doctor and it dawns on them that they do need expert testimony they go out shopping for the wrong answers. They call up a doctor and they say "Doctor, what do you think about this case?" Well, what he thinks about this case doesn't make any difference. That's not the test. In determining whether the doctor defendant has conformed to the community standard, the opinion of another doctor as to, "Would I have done the same thing" is absolutely out of point. It's immaterial.

Community standards vary. Lawyers frequently would like to believe that there are such things as universal standards so that they can import a doctor from here, there or anywhere to testify concerning what is the standard in this local community. It might be nice for some if that were the case, but it is not. There are many areas in this country yet today where kitchen table surgery is the custom. You can't accuse this doctor who is in such an area because he didn't have the cardiac arrest tray handy when the next door neighbor came in and started dropping ether. This applies as well to all other professions. You are judged by the standards of the community in which you practice, and the attorney who has a case either for or against a doctor in this situation must direct his thinking to that community and not say

"Well they do it different at Childrens Hospital in Boston." Maybe they do.

Mistakes are made. I'm sure there is no one here who either hasn't made them or knows of them. Doctors are human beings. They are not perfect. Is a mistake grounds for claiming legal liability? The answer is no. When a patient comes to the doctor, the human frailties of that doctor are a risk that the patient must assume. We have successfully defended in our company many, many claims involving obvious mistakes. The doctor explores and thinks he has identified the cystic duct and it turns out to be the common duct but he ties and cuts it. He is doing a hysterectomy and he thinks he's tying off a uterine artery and it turns out to be a ureter. These are clearly mistakes of course, but the committing of this mistake is not of itself proof of legal liability on the part of the doctor and the attorney who takes a case thinking that he is going to win just by proving this has got a real shock coming. Certainly, a mistake can be the basis of liability but, this is at the tail end not at the beginning. The question is, "Did this doctor while performing this surgery use his skill and learning and did he conform to community standards?" Now if he did and still made a mistake, it's unfortunate but that's the end of it. If he makes a mistake because he failed to use his skill or conform to standards that's quite another matter. The point I'm trying to make is that the mistake isn't the test. The test is the doctor's compliance with the standards of the community and his application of his skill and learning according to his ability.

Certain cases have been decided by our courts to be so clear as to require no expert proof. I suppose the leading case is the foreign body case. That is, if the doctor leaves a sponge or a clamp or what have you, and some of these get pretty weird. I know of one particular case involving a fractured femur. The man had considerable trouble for some time after this was worked on and he was plumped and probed, etc., and finally they decided to take an x-ray. The man came in and had his x-ray and then he went home and a couple days later he called up the doctor and said "What about that x-ray?" The doctor said "Well, you got to come back and have another taken and this time when you have the x-ray taken, take your pants off, will you." He says "What do you mean?" "Well I can't tell anything, with that pair of pliers you've got in your pocket." Well, the man didn't have his pants on. It's kind of hard to imagine how a piece of machinery about this long can be left,

but it was, and that's true. A recent case, (when I say recent, it is about four years ago now) was a suit against the Mayo Clinic. The operative procedure was a parathyroidectomy and this involves a pretty small incision; it is fairly deep but there just isn't a very big hole made. Somebody left a sponge in that hole. Some of these things are hard to believe and generally speaking in that type of case our law will not require that you go beyond the fact itself. That is, that there is a foreign body left. At that point the burden of proof shifts to the defendant to explain his way out of it if he can. Here, if you are the plaintiff's attorney suing the doctor on a foreign body case, if you rely only on that fact and inquire no further, watch out, because you may get a real shock. These foreign body cases are not absolutely indefensible. There are many situations in which this foreign body is justified. Consider the thoracic surgery, this is a mess — I'm not telling you doctors anything, but for you lawyers this is a really gory procedure. You have blood running all over. You have sponges by the pail full. Now during this procedure if the anesthesiologist looks up and says "Doc, I think you better close up and get out of here, I think this guy's going down," you don't take an hour off and start counting sponges. You close up and get out and if in this case a sponge is lost, it is justified. We have tried many cases of that sort and successfully defended them. So again, don't stop with the result. Really this is the whole message I have in professional liability, the result is not the test. There are these mechanical problems but they are rare really. In most of your unfortunate result cases there has been judgment involved. Now there may be legal liability for faulty judgment, but it is not on the basis of faulty judgment. It must be on the basis of the failure of the professional man to do what is routinely called for in forming the judgment. The doctor who makes a diagnosis is not liable to his patient because he is wrong in the diagnosis. If he has failed to make the tests that are routinely employed in that community in order to make the diagnosis, then he may be in trouble.

Another area is the matter of informed consent. Unfortunately there is an awful lot of misunderstanding about this, not only among the practitioners but among the courts as well; and I suppose in Minnesota we're as guilty as anyone. Our court kind of led the way in a case that I had a part in preparing. All of you doctors certainly know Doc Foley in the Twin Cities. For the benefit of the attorneys here,

this man was a very famous urologist. He had an old patient, Jelmer, and Jelmer had some trouble. He had a little cancer in the prostate and Doc Foley said "Well, Jelmer, we're going to have to whack that out" and Jelmer said "yah." So he operated on him and as is routinely done in this procedure there was a **prophylactic vasectomy** done. Now this is medically necessary. It is just like a cancer of the breast case. When the doctor operates, he doesn't just whack out a little piece of meat, he goes way up under the arm and if there is any indication, anything calling for it, he'll go way on up, he'll take out the glands, the lymph glands under the arm, perhaps go way down the arm. Well the same thing with this problem of Ole Jelmer. If there is cancer in the prostate and if you want to cure the patient you better get all the associated tissue into which the cancer may go. Well, Jelmer woke up and somewhere along the line it dawned on him that there had been a **vasectomy** done and he got awful sore about this and mama got sore about this too. Jelmer was approaching eighty and so he got himself a lawyer and he sued old Doc Foley. He said "Doc, I told you to whack out that cancer, I didn't tell you to go monkeying around with anything else." Then Jelmer got on the stand and he told about all the fun he used to have and now he can't no more and mama did too. Well, we got a directed verdict and Jelmer wasn't satisfied with that so he went up to the Minnesota Supreme Court and the Supreme Court says: "Hey, Doc Foley, you didn't tell him what you were going to do. You told him he was going to have an operation on the prostate but you didn't tell him you were going to do anything else. Now this man is entitled to know what's going to be done to him and you better tell him." So, it was sent back for new trial. Now, this doesn't appear in the case books of course, all you read there is the decision of the Supreme Court on that first trial, but the fact is that we did try it a second time and the jury went out at about a quarter to twelve, took that last fifteen minutes of the morning to elect a foreman went and had a free lunch on the county and when they came back at one o'clock they spent another five minutes and came in with a defense verdict.

The patient is entitled to know what's going to be done to him. Now the basic law is this. Everyone of us has a duty to everyone else not to touch him; not to physically interfere with his person. To get around this you must find consent. When you walk down the sidewalk you impliedly consent for the jostling that you're

going to get as a routine matter. All of us, as we come out of this room, impliedly consent to the contact that there may be between us as we go through the door. But there must be consent to any touching of the body and if there is not, there is an illegal assault. Now this consent must be with knowledge of what's involved and this is really what this informed consent is all about. It is a qualification of the law of assault. I don't know what the standard is here locally. I presume it is about the same as most everywhere else. If you're in there on an exploratory laparotomy you very likely will do a **prophylactic appendectomy**. Well, if you consider that this is necessary you better tell your patient what you're going to do before you do it. Keep in mind, granted the appendix is no good to him, this man is entitled to his appendix and you can't take it without telling him. It's pointless to go into great detail about the various legal problems involved. I would say this to the doctor, be a good doctor, tell your patient what he is entitled to know but do this consistent with good medicine.

I speak now as a representative of the insurance industry. We're not going to be particularly concerned about a lawsuit on informed consent where medically it would have been inadvisable to discuss the matter. How much elective surgery would there be if you went into great detail with your patient concerning all of the risks and all of the things that you are going to do. In Doc Foley's case, after this case was conducted, he wrote a letter to the Chief Justice of the Supreme Court and told him what he had done by this decision. He said "How much operating are we going to do?" He said "I have to tell this fellow 'Charlie you have cancer and I think you're probably going to die but I think I can save you. In order to do this I am going to have to operate on you. Now you know what that means. First of all you're going to have to go to the hospital and you know those damn hospitals. Somebody's liable to let you fall down an elevator shaft. Well, assuming you get by that and you get into your bed safely, this nurse is going to come in and she's going to give you some medicine the night before to kind of put you at ease. Well, just like as not she's going to make a mistake and give you the wrong thing that might kill you but, if you survive the night then come next morning somebody is going to come in since we have to shave you. Well, they're going to go scratching around with that razor and they'll probably nick you and you know all this staph infection in the hospital;

you'll probably die from that; but, if you live long enough to get to the operating room then we're going to have to put you to sleep and you know there's a certain percentage of people who just plain die from the anesthetic!" Well, it goes on and on for several pages. Legally it's correct. Legally if you were to be safe you would have to go through all this rigmarole. But this is nonsense. This is a risk that we as insurers very gladly accept. Be a good doctor. Be a doctor first. Don't worry about the law. Certainly, under such circumstances there would be no elective surgery at all, and there would be very little emergency. What this informed consent does really is change the nature and the quantity of proof that is required in a malpractice claim. In proving care, skill, etc. your test is the standard of the community and to prove this we require expert testimony. If there is a violation of this man's personal rights, if something has been cut out of him that he is entitled to keep, if he hasn't been told the risks of the procedure, then you are in an area where you do not need expert testimony. You have a fact question that the jury can decide on lay testimony and the serious problem for the doctor of course in this situation is that something may go wrong. For instance, the **prophylactic appendectomy**. So you take his appendix out, so what, what's his damage? Nothing! But unfortunately sometimes things go wrong. I recall a case quite recently involving just this procedure. The tie came loose on the stump and this man had real problems. There was fecal material leaking out into the abdominal cavity. He had a real fine infection going. Now technically there wasn't anything really wrong. What the doctor had done would have been defensible had it not been for the fact that he did something that the patient didn't know about. If he had been in there for an appendectomy and if this had happened we could have successfully defended him because he did comply with the community standards. He put the tie on, he tied it properly. It was just one of those unfortunate accidents that happen. But, because he had gone in there without the consent of the patient, without telling him what he proposed to do, the issue of skill and care was not involved. It was only a question of assault and the damages of course follow right along behind. I would just say this. Assault and informed consent is nothing magical. Reading the cases you may think it is but it's just a qualification of the law of assault. You avoid an accusation of assault by informing the person that you are going to touch him, and

getting his consent to do it and to get consent he has to know substantially what it is that he's consenting to.

Unfortunately, the law of contracts gets into the doctor's field all too often. I don't know why this is but for some reason or other dermatologists seem to be the prime target. I suppose because very often they are working in cosmetic surgery which is an elective sort of thing that nobody really needs. They think they need it, they want it, but there is no serious health hazard involved. The doctor insists on telling his patient that he is going to produce a 50% improvement for him or 100%. Now this is a contract and you are outside the field of negligence or care and skill of the community. It is a plain out and out contract and I would say to you doctors, don't do it. If your patient says "How am I going to come out?" scratch your head and say "Well most people..." or something of that sort but for heaven sakes don't guarantee a result. You can't do it. And, if you do and if it goes sour you are stuck on a contractual basis.

Doctors are subject to a lot of unusual exposures. Most doctors have some hospital staff position or medical association position which may be the source of a claim against them. Activities of this sort are certainly commendable. We as insurers again have no hesitation about encouraging these things. We willingly accept the defense of the claims that we get as a result of these activities. You should police your profession. You should clean out the undesirable. Unfortunately today when you do that you're probably going to get sued. We have suits pending all around the country against the staff committees of hospitals. Some doctor is kicked off the staff because the Tissue Committee reports that most of his surgery was unnecessary and now he's mad because he's off the staff and he sues the members of the Tissue Committee. The hospital staff elect not to allow chiropractors or osteopaths to practice in the hospital and they get sued on a claim of a conspiracy. Of course this doesn't stop with the doctors. This goes into all professions. Realtors get these claims against them. They belong to a multiple listing exchange. Some realtor has made a habit of inviting lady friends to houses that he's allegedly showing and gets kicked off the multiple listing exchange because of it and now he sues the realtors in the town alleging conspiracy. Don't worry much about it. Be a good doctor, be a good lawyer. Practice your profession and let these problems fall where

they may. There are problems with publications. Every so often a doctor will get sued because he wrote a paper without getting a model release from somebody that had a picture or a waiver from a patient whose case is described. This is a theoretical area of legal liability but, I would say to you, as a representative of the insurance industry, don't worry about it. Go ahead and practice your profession.

Attorneys are really subject to the same law. Again it's a standard of the community. Most of the claims against attorneys are on mechanical problems. The statute of limitations has been let run; there's been an error in filing something that should have been filed with the registrar of titles instead of the Register of Deeds office. These are about like foreign body cases to the doctor. They at least start out with the appearance of liability. There isn't an awful lot of activity in lawyers professional liability at this time in this area. When you go east there is. Hopefully it won't get out here.

As to what we do with a claim in the insurance company. Well of course its like any other claim. We have our internal office routines that have to be gone through. We have to check the coverage to see to it that we do insure the man, that the limits of the policy are adequate, etc. This is the same routine that we go through whether it is an automobile case, fall-down or what have you. The handling, and I can speak generally for the industry, although there may be a company here or there that will not follow this pattern, is quite different. Our handling of a professional liability claim is keyed to the law which is somewhat different than that in an automobile case. In the automobile case of course you go out and you contact everybody you can find and you take statements and you negotiate, etc. Not so in the professional liability case. When we get the report most companies will make a fairly careful inquiry of their own insured. In most cases we will not go beyond that. I say this to both the doctors and the lawyers: If you have a problem, if there is a potential claim against you, for heaven sakes report it to your carrier. Don't sit back because you're afraid the insurer is going to go out and stir up trouble. We will investigate these things only to the point necessary to adequately defend you. In the case of the doctor, we will rarely contact the patient. There's no point to it. In the surgical case, what can we find out from the patient who was under an anesthetic. He can't tell us anything. We will not go out and create a public issue of these

claims. Trust our discretion. We're there to serve you. We're not going to create a problem where there is none. Tell us about it; make use of your coverage. We can only help you, we can only perform according to our contract if you report these things to us and give us a chance.

Routinely in professional liability claims the plaintiff's attorney's typewriter gets stuck. It seems that there is some tape or something stuck over the zeros. You hardly ever see a suit for \$5,000 or something of that sort; it's for \$500,000 or a million and a half. Ordinarily you will not be insured for that kind of money so routinely you will get a letter from your insurer telling you or reminding you that you have been sued for more than your limits and that you may, if you choose, retain your own attorney. I say now to the attorney who is hired by the doctor as his personal representative, do what you have to, you're the lawyer, you know the law, you know what you have to do but think a little bit, and before you advise the doctor contrary to a position that the insurer is taking, make reasonably sure that you know more about it than we do. Malpractice cases are not common. Most attorneys are not expert in this field and I assure you that these matters are not handled like the fall-down or the auto accidents. If you are called upon in a case of this sort, scratch your head a bit. Do what you have to but don't just off the cuff advise the doctor to take a position adverse to what his carrier would like to take.

I would say this to the attorneys who may have a plaintiff's case. Be responsible, please! I'm not talking law now, I'm talking common sense and humanity. Feel responsible. You're dealing in a professional field. This isn't like the auto case. There's no particular stigma attached to being a defendant in an auto case. (Actually, it doesn't hurt a professional man particularly either. I don't know of anybody who has lost any income because he got sued. I don't know how frequent these suits are here but I do know in St. Paul and then going east, that if I walk into the doctors' room in a hospital everybody there knows me). But the professional man himself worries a great deal about this and there are people that will attach an improper association to a claim of this sort. So don't do these things just for fun. I suppose it's fair to say that any auto or fall down case that you might have is worth something. I keep telling the claim men that work for me that it isn't so, but the fact is that if you start a non-meritorious case, ordinarily you can get out with at least

some savings of face. Again I can't speak for the entire industry. There may be companies, as a matter of fact there are companies, who haven't learned their lesson yet and who will attach a nuisance value to a professional liability claim. We don't. Most of the major professional liability writers do not. There just plain is no such thing as a nuisance professional claim. If we don't owe it, we aren't going to pay it. We're not going to give you five cents, so if you start a malpractice claim you better figure that you're going to trial. If you have a winner, most of us would like very much to dispose of that claim. We will try to put a fair figure on it. Of course that's a pretty loose term and certainly there are going to be disagreements but, try to work it out. Don't just haul off and sue without at least exploring settlement possibilities. These cases, to the insurance company, are either black or white. If they are cases of liability we would like to dispose of them as quickly as possible and to do so we don't try to quibble. Admittedly we may not come up with the same evaluation that you do but we would like to get rid of them. On the other hand, if we feel that we can defend these claims we are not going to pay you anything, so when you have a client who thinks he has a professional liability claim look it over and think it over and act responsibly. You're not doing yourself any favor when you sue a loser, you know. You're much better off to tell that client "Charlie you just plain haven't got anything here, why don't you forget it." I know that this doesn't go well but it's better to do that than to explain to old Charlie after the case is over why he has to scratch up the cost money.

Some practical comments so far as insurance is concerned. Don't rely on institutional coverage. Now this doesn't have too much application to the lawyers, but it does to the doctors. If you're working in a hospital don't assume that you're covered by the hospital policy. You may be, but don't assume it, check on it. To the doctors and lawyers; if you're in a firm and you leave, don't forget your insurance. Check on it, see how you are insured. See whether this coverage follows you when you go on your own or into a new firm. There are an awful lot of unnecessary problems arising out of this failure to pay attention to your insurance. I don't know why this is but it's an odd thing that the dentist, for instance, that moves he makes sure he's got the direct loss coverage on the chair and on the tools, etc. but it never dawns on him to check on the liability coverage. I suppose this is true

generally. People are much more concerned about being sure that the fire insurance on the house is paid than they are with the liability insurance or the liability coverage on the auto. I would remind you to pay attention to this and especially doctor, don't rely on an institution to be protecting you. The standard basic hospital policy does not cover employees or staff members, etc. Many of them now are endorsed so that they do extend this coverage but you can't guarantee it. I'm going to sit down now, but I would leave this with you.

Most professional men are very much concerned about their reputation. They worry a great deal when they are threatened with a claim. Frequently they will run to us and say "Holy Smokes, Mr. Insurance Company, buy us out of this quick. We don't want any publicity." You aren't going to stop the publicity by doing this. If you've got a client or a patient that's mad enough at you so that he wants to make a claim he's going to talk. He's going to shoot his mouth off to everybody that he can catch and that he can hold still long enough to talk to and he's going to flap his trap from now till evermore and you better believe it. The only choice you've got is what he will be able to say. When he goes out there shooting his mouth off, do you want him to say "This doctor is a lousy bum butcher and I can prove it cause look at the money he paid me" or do you want him giving out the sour grapes story of "Well, you know, he's a lousy doctor but that doggone jury said he was right." This is the choice you have. What do you want him to say. He's going to talk.

If you're wrong, don't hide it. If you are wrong report it to your insurance, be frank with them. Don't play cute. Now unfortunately this doesn't happen very often but occasionally we do have a situation where the professional man under the policy provisions will not consent to settlement. Don't be silly. It may hurt your pride to admit you're wrong but if you are wrong you'd better face up to it because its going to get to you sooner or later and the quicker you face up to it the easier it's going to be on you. On the other hand, if you are right, don't get worried about a law suit. Join the club. It isn't going to hurt that much. If you're right, say so, stick up for it and don't run scared.

I think I've more than used up my time, besides that I'm all dried out. There will be a panel I believe this afternoon and — do you want questions now? Oh, all right, fine. I'll take a few minutes to answer questions now. Yes, Sir.

- Q. You say a case is either straight black and white. What did you do with the gray?
- A. Well of course there can be a gray case, but these are rare. They're rare and these cases of course would be compromised just like the doubtful auto case. Yes Sir.
- Q. Are counter suits against plaintiffs on claims that have been lost very common?
- A. No they are not common at all because the basis for the claim doesn't exist. We get asked this quite often. The doctor says "Well, that dirty so and so, I'll show him. I'll sue him for abuse of process or something." Well the grounds aren't there. To successfully prosecute somebody for abuse of process, his claim has to be malicious. Intentionally malicious. These claims aren't made in that fashion. They may be groundless but they're not malicious. Yes Sir.
- Q. Is there a tendency for the courts and juries to be a little more liberal in these matters now than they were years ago?
- A. Courts, yes; juries no. Well it depends on what you are talking about. Money, certainly.
- Q. I'm speaking of both things, money as well as resolving the question of liability.
- A. Jury values follow national economy, practically to the penny. The case that was worth \$750.00 last year is worth \$850.00 now. Inflation makes itself apparent. The law generally has become more liberal, more favorable to the plaintiffs. It is like any other case. Most of these trends seem to start in the west. California, of course, is wild on their law. In California everything I've said has to be disregarded because in California a bad result is the starting point for a lawsuit. And then it's up to the doctor defendant to prove why he isn't responsible. He has to prove two things — he has to prove what went wrong and then show that what went wrong was not his fault. Well, all of you doctors know, and I presume the lawyers know too, in most cases you can't say what went wrong. It might have been one of many dozens of things. So the doctor is done. Now I don't mean that this results in automatic judgment against the doctor. What I mean is that now it goes to the jury and the jury is entitled to decide without any further proof whether the doctor is liable or not. While the courts have been most liberal, the

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MEDICAL MALPRACTICE – WHAT IT IS AND HOW TO AVOID IT

Roger F. Johnson, M.D., LL.B.*

As is not unusual for me, I find myself in the middle of conflict that rages between some doctors and some lawyers over medical malpractice. As a physician and attorney, I have occasion to consult from time to time with the protagonists in this debate and tend to see the emotional arguments and positions of the two different sides. My own background is involved with the practice of both law and medicine. In the area of medical malpractice, for reasons of practicality, I do not personally institute actions against my medical colleagues in Colorado. This does not necessarily mean, however, that I think that medical malpractice claims do not have merit, for as I am sure the attorneys here present are aware, there are indeed numerous cases of record wherein there is compelling evidence of professional negligence.

In considering the broad scope of the entire problem, I think it is of value to address oneself generally to some practical considerations which may explain, in part, **why** malpractice claims arise and perhaps more importantly why malpractice claims are on the increase at the present time. At this point I ask you to accept the thesis that nationwide the trend is toward the filing of more such claims rather than less, and I will suggest to you a few of the reasons which I believe account for this situation.

No doubt one of the primary reasons that may account for the increase in malpractice cases is the failure of doctor-patient rapport. The day of the buggy and the kindly, bumbling family doctor has gone from our contemporary scene and with it has gone much of the doctor-deity image that was historically attached to the family small-community doctor. As the rural rapport fades with urbanization, it should not be surprising to anyone that there should come concomitantly with it an increase in professional malpractice litigation.

A part of the problem in the diminishing rapport situation is the failure of communication and understanding between the doctor and his

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patient. Picture, if you will, a doctor saying something which the patient does not understand and the doctor does not take the time to explain or even be concerned with the fact that the patient may not understand what he has said. In addition to this, the doctor uses a language and terminology which is foreign and nonunderstandable to the patient. Taking all these things together, we find a lack of communication and a void of understanding.

As we take less time with the patient and become less and less involved with the patient's personal life, we tend to develop and portray an attitude of not wishing to become involved with his personal life and we unknowingly communicate this attitude to the patient. This attitude appears to the patient to be one of indifference which the patient resents, covertly and at times overtly. Why then should the patient hesitate to consult an attorney if the situation should arise wherein it might appear to a non-informed patient that the doctor may have done something wrong? In being self-critical, as we should be, I suggest to you that one of the reasons for the development of this attitude involves the superspecialization that the practice of medicine has achieved. The specialist does not see the patient as a whole patient, nor does the patient see the specialist as a whole doctor. The specialist doctor is concerned with a hand or an eye and the patient sees him only as "my eye doctor" or as "my hand doctor." He does not see him as "my doctor," or as "my confidant" or "my community leader" or as "my friend." How often is it that the attorney sees a prospective client and hears the complaint from such prospective client that the potential doctor-defendant "didn't seem to be interested in my case." The attitude of protecting the doctor is disappearing and is being replaced by a businesslike approach on both sides. The patient feels that as long as he pays his bill he is entitled to service in return, and if he does not receive what he feels to be good service for money payment, then the physician who has failed to provide the service may be called upon to answer in court. I am acquainted with a surgeon who does probably more surgery than anyone in the entire western area, and yet as busy as he is, he has the unique quality of developing in his patients the impression of his being totally interested and totally concerned with his patient's personal problems. As he makes rounds, he takes the time to discuss with his patient some of the small and even petty problems of their daily lives. He makes it a point to

know if this patient is married and who the children are and how far the children are in school and how well they're doing in school. I suggest to you that it is unlikely that this physician will ever be called upon to defend himself for malpractice, even though he may have just as many complications and just as many poor result cases as any other similarly qualified surgeon.

There is no doubt in my mind that a great many malpractice claims are simply the "poor result cases." Where there is no communication and no rapport and then tragically a bad result, it is understandable that the patient may say to himself or have his friends say to him, "There must have been something wrong; otherwise, why are you having to stay so long in the hospital, why are you having to have this additional expense and so forth." The patient then asks that question of his attorney. The attorney may say to himself that it does indeed sound incredible. I have even had attorneys say to me, "The result was bad and therefore don't you think the doctrine of *res ipsa loquitur* will apply?" The ultimate result, of course, is the filing of the lawsuit which may well have no basis in law or fact. It is the attorney's practical and ethical duty to be critical of the bad result case. I would say that of all the malpractice cases that occur in our community, the ones that the attorneys should be least happy to accept or least likely to want are the bad result cases because oftentimes these cases are the ones where there is absolutely no sustainable liability. Unfortunately, to the attorney such a case is attractive because the damages are generally large, there are substantial hospital bills, numerous consultants, many problems and a potentially large verdict. In critically appraising the fact situation prior to the accepting of a case, the attorney should consider that not uncommonly the bad result is the fault of the patient rather than of the doctor. In my own practice, a part of which includes the running of the emergency room at our City Hospital, we can anticipate that there will be complications because we know that some patients will refuse to follow the instructions given them, that some patients will fail to return for follow-up care, that some patients are not even interested in getting well and accordingly do things which they are told not to do with the result that they do not get well.

Many of the patients that I treat in the emergency room are too intoxicated to give an ade-

quate history and they are too dirty to examine. This causes obvious problems in the treatment program to be followed. From time to time we find it necessary to bathe the patient before examining him before we know what his complaint may be. I am sure that all physicians here present would agree that this is not a desirable procedure to follow, and yet it is an exigency of county hospital practice.¹ I recall a case of a patient-prisoner who was brought to the hospital from our County Jail. He presented himself in the Emergency Room as an acute abdomen with severe abdominal pain and tenderness. Historically, I was unable to determine the cause of his abdominal distress and this patient steadfastly denied any previous stomach trouble and was unable to give a reason why he should be in such pain. X-rays were obtained of his abdomen and these revealed the presence of a tablespoon in his stomach. One would have thought that this patient would have recalled ingesting such an object but he was unable or unwilling to so recall it. We are also required at times to restrain patients in order that we may administer what we believe to be proper medical-surgical care. I suspect that such restraint may be a violation of civil liberties, and in this regard there is an interesting annotation at 89 ALR2d if you wish to pursue this point.² Nonetheless, I suggest to you that these various situations are germane to the point that patients do participate in the bad result cases and the attorney, when presented with the simple bad result case, should appreciate this fact and not permit himself to become involved in a case which may later on be embarrassing to him and in the last analysis, to his honored profession.

Another familiar and common inciting factor in malpractice litigation involves the inadvertent comment by one physician concerning another physician's treatment. Two doctors may justly disagree as to the proper form of treatment to be used in any given case and the derogatory comment of Dr. Number Two may well suggest to a patient that Dr. Number Two feels that Dr. Number One has been negligent. This makes the patient angry and he immediately confers with his attorney and tells the attorney that Dr. Number Two has stated that Dr. Number One has botched up the entire job and is certainly guilty of negligence. Invariably

Dr. Number Two will deny having said or done anything which might conceivably have given rise to such an impression in the patient. Yet, the seeds of the lawsuit have been planted.

Compare the inadvertent comment then with the advertent encouraging of a lawsuit by a doctor. This is the situation where a physician encounters a case which involves obvious professional negligence. The physician then decides whether or not he wishes to become involved in the matter. All physicians should agree that the primary responsibility of a physician is to the patient and not to his colleague and although it is relatively uncommon, there does appear from time to time on the scene a physician who has become incensed at the obvious poor practice of a colleague and does desire to bring this fact to the attention of the patient for whatever use the patient may make of it. This raises the interesting question of how far doctors should go in being critical of each other. As you all may be aware, most major hospitals undertake the responsibility of supervising the activities in the hospital for the purpose of improving patient care. In this regard the members of each hospital staff are required at times to be critical of each other, and in performing this function, the hospitals have established numerous committees to review certain areas of practice in the hospital. For example, there are tissue committees, morbidity committees, mortality committees, teaching committees, credentials committees and the like.

A question was presented to me by one of our local hospitals as to whether or not the activities and comments of any of these committees were subject to being made public via discovery procedures. That is to say, if one doctor is critical of another in a tissue committee, can the patient discover such criticism through legal channels. To this point you may be interested in knowing that the Inter-professional Code of doctors and lawyers in Colorado provides that while no medical expert can be compelled to form an opinion, if he has an opinion "he is obliged to state it." The logical application and extension of this subject is that a claimant's attorney, who has reason to believe that his client's case had been before a committee, will subpoena the members of that committee as his expert witnesses and compel them to state their critical opinions of a defendant doctor for the purpose of establishing the burden of proof.

For whatever comfort you may gain therefrom, my feeling is that the minutes and records,

1. For comment on Emergency Room liability see JAMA Nov. 7, 1966, Volume 198, No. 6.

2. See also "Therapeutic Restraint" JAMA, July 4, 1966, Volume 197, No. 1.

if any, of such committees are not discoverable, but this is simply my opinion as the matter has not been decided by any appellate court. There are several cases which touch near the point but none directly on it. See *Wallace v. Univ. Hospital of Cleveland* (1959) 164 NE 2d 917; a rehearing **modifying original opinion** provides that the hospital records which are discoverable include those which are invalid and pertain to patient's "hospital stay and treatment." It seems logical to me that the patient is entitled to the information concerning his care and treatment as appears **in his** record, but not to the hospital's intra-committee record.

Finally as there is ever greater invasion of medicine by government, it is fair to assume that as the physician becomes more nameless and more faceless than he presently is, even greater numbers of suits can be anticipated, assuming, of course, that there is an appropriate federal statute under which such litigation could be brought.

With this as an introduction as to **why** we have malpractice, let us now explore the question as to **what** is malpractice. For the sake of convenience we may categorize professional malpractice into three general categories: (1) improper diagnosis, (2) improper treatment selection and (3) proper diagnosis and proper treatment selection but improper application of treatment.*

It has been stated that the physician is not liable for simple errors of judgment, but this statement, taken on its face and literally interpreted is not entirely fair nor accurate. The physician is liable for his error in judgment if his error is such that other physicians, to whose standards he is held, would not have made the same error in judgment. Thus, in the area of improper diagnosis, the physician is held to make that diagnosis which would be made by others of like training and experience in the same or similar community. An example that comes to mind involves the case of a general practitioner who had as his patient a young boy who presented the chief complaint of a pain in the right wrist. Historically, it was learned that this boy had been involved in cranking an automobile motor and, as the older persons among you will recall, when the crank did not disengage from the started motor, it flew from his hand and in its rotation struck the boy's

wrist at the base of the thumb. Physical examination revealed tenderness and swelling at the base of the thumb and a wet reading of an x-ray taken at that time was said by the general practitioner to be negative for fracture. The patient was told that he had a sprain of the wrist and was advised to soak the hand and that if it continued to bother him to return for further evaluation. The boy did return because of continued pain and tenderness and the physician advised the patient to exercise his wrist more in the hope that exercise would speed up the healing process. Six months later, because of continued pain and disability in the wrist, the boy was seen by another physician who obtained a second x-ray. This x-ray revealed an old fracture of the navicular bone with aseptic necrosis of the medial fragment. The boy subsequently required bone grafting procedure, prolonged hospitalization and sustained a marked disability of the right hand. Review of the x-ray taken by the physician on the first visit showed an obvious fracture of the navicular bone. Failure to make the diagnosis of this fracture was considered, by those who reviewed the case, to be a failure of diagnosis which fell below the standard of practice required in that community. Accordingly, the claim of the patient through his family was settled by the physician's malpractice carrier. For further cases on this point see 54 A.L.R. 2d 273.

The second category involves the improper selection of treatment. Once again, whether or not there has been an improper selection of treatment will depend upon the standards of care required in the particular situation as would be measured in the same or similar community by persons of similar training and experience. Clearly if a treatment has been selected which is improper and the result which flows therefrom is disastrous, then the physician who makes the improper selection of treatment may be accountable in damages for his negligence.

I recently had occasion to consider the following situation: A patient presented himself to an osteopathic physician complaining of retro-orbital headache, vertigo, blurring of vision, expressive aphasia and several other complaints which were directly related to the central nervous system. This problem had become so severe that the patient had been forced to quit his job two days prior to his visit with the defendant doctor and had told his wife, "Something happened at work today. I don't know what it was,

* For a description of particular examples of malpractice, see 41 Am. Jur. Section 92.

but I blacked out." He went on to say that he simply could not perform his job any more because of the dizzy spells, the blackouts and the inability to express himself. The physician who heard these complaints was apparently unable to understand them or unwilling to accept them and went on to learn from the patient that this patient did have occasional trouble with his stomach, described as a "little bloating occasionally after meals." The doctor ordered x-rays of the patient's gall bladder and determined therefrom the presence of a single gall bladder stone in a normally functioning gall bladder. By way of background information at this point, it is commonly agreed by most patho-physiologists in this country that it is good elective treatment to remove a gall bladder containing a stone because of the higher incidence of cancer in the diseased gall bladder. Whether or not the physician in this case had that fact in mind we do not know; however, we do know that the patient was hospitalized and an operation was performed to remove the gall bladder. This non-emergency operation was performed under open drop ether type anesthesia and during the procedure the patient was noted to have experienced wide fluctuations in his blood pressure. Post-operatively the patient was noted to have a total expressive aphasia and a right sided paralysis. It was apparent to those who examined the case that this man had suffered a typical cerebral vascular accident or stroke on the operating table. I cite this as an example of a situation where there may have been a proper diagnosis, that is to say, of a stone in the gall bladder, but an improper selection of treatment. Clearly in a patient who presents ischemic brain symptomatology there is ample reason to believe that a major operation under drop ether anesthesia would be extremely dangerous to him and would likely precipitate a stroke. This patient was a poor candidate for the type of treatment selected for him by his doctor. In addition, the case probably is an example of improper diagnosis in that there was medical opinion to the effect that the standards of care in that community required the diagnosis of impending CVA to be made.

At this point and somewhat as an aside point, we should consider another area of improper treatment. What about experimentation? To introduce this situation consider the following example. A specialist undertook to perform a tonsillectomy on a young boy. After having removed the tonsils the specialist injected into each tonsillar fossa a solution of Deptotmedral,

penicillin and xylocaine. The child thereafter developed bilateral blindness. It was determined that there may well have been a relationship between the injections into the tonsillar fossa and development of blindness, either through an intro-arterial injection or through some form of vaso-motor reaction. The injection procedure had been described in the medical literature but was not being performed by any other person in the community. The purposes of the injection were described as being for the relief of pain and the reduction of post-operative swelling and infection. The principal purpose of the injection then was that of post-operative comfort. In the Ethics Opinions of the AMA, reported in the Judicial Council of 1964 Report, commenting on Section 2 of the medical ethics, it is stated, "Physicians should strive continually to improve medical knowledge and skill and should make available to their patients and colleagues the benefit of their professional attainments." The Council notes, however, that experimentation such as that described in Dr. Andrew Ivy's report of the Nuremburg war trials was absolutely opposed to the principles of medical ethics of the A.M.A. The Council states that in order for any kind of experimentation to be properly done, three requirements must be met. (1) There must be the voluntary consent of the person on whom the experiment is to be performed; (2) the danger of each experiment must have previously been investigated by animal experimentation; and (3) the experiment must be performed under proper medical protection and management. This subject is discussed in Volume 275 No. 6 of the New England Journal of Medicine issue dated August 11, 1966. It is probably fair to state that in the doing of any new or experimental procedure, not only do the above three requirements need to be met but in addition it must be clearly shown that any inherent risks of the procedure are out-weighed by the potential medical benefits to be derived and if the converse should be true, then the procedure should not be undertaken.

The final general category is that of the proper diagnosis and the proper selection of treatment, but the improper doing of the treatment or the treatment procedure. The obvious and most common cited example in this category involves the leaving of a foreign object, such as a sponge or hemostat, in a patient after the doing of a procedure. I think it is fair to state that in this type case the negligence is apparent and it is provable without expert testimony

through application of the doctrine of **res ipsa loquitor**. However, there may arise in these situations a serious problem over causation. Oftentimes the foreign object left in a patient causes the patient little or no distress. The damages, are, therefore, limited many times to the costs of removing the object and the attendant pain and suffering that one might anticipate would accompany such a procedure.

The following fact situation is illustrative. A young woman had a routine hysterectomy and recovered from this operation without difficulty. She did experience over the next two years, intermittent abdominal pain. This distress would range from severe pain to a mild diarrhea. She was finally seen after approximately two years by a physician who obtained laboratory and x-ray data and as a result of this concluded that this woman had a large cyst in her abdomen. A laparotomy was performed and the cyst was located and removed. Examination of the cyst revealed that inside the cyst was a surgical sponge left in the patient's abdomen at the time of the hysterectomy some two years before. The case was complicated by the fact that some months before the recognition and removal of the cyst, this young woman suffered a stroke. The question was presented as to whether or not the sponge and the attendant foreign body reaction had any relationship to the stroke. Because of the girl's age and prior good health, it was concluded that the most likely cause of the stroke was an embolus and the question presented was what was the origin or site of the embolus? In order for the sponge to be causative of an embolus, one would have to assume that the embolus was a "paradoxical embolus," that is, one which would have to pass through an abnormal opening in her heart to reach the brain, an opening called the foramen ovale. From cardiac examination, however, there was no suggestion that this woman did, in fact, have an abnormal heart. Therefore, one would assume that the sponge did not cause the embolus and accordingly was not responsible for the stroke.

In addition to the previously mentioned categories of professional malpractice, we should also mention at least one other form or cause of action. Years ago it was not uncommon for a physician to be sued under the theory of assault and battery for failure to obtain a valid consent to the doing of a procedure. Today it is unlikely that the modern attorney will file a case under this theory, at least not in Colorado, because of

several practical limitations. In Colorado there is some question as to whether or not a case filed as an assault and battery is limited by the two year statute of limitations for medical malpractice or by the one year statute of limitations for ordinary assault and battery. It may also be that there is no coverage under the malpractice insurance for an assault and battery if we assume that an assault is an intentional act. You may recall that most liability policies do not cover intentional misconduct. Be this as it may, consideration of this problem does bring into focus the question of new developments in the law of professional negligence.

Obviously, we are concerned with an area of considerable recent development. One of the most discussed problems is that of informed consent. To begin with, it is clear that we no longer speak of consent in terms of a **form** consent, but necessarily must talk of consent as an **informed** consent. Numerous articles have been written on this subject and you may be interested in the following: "Medical Malpractice," University of Colorado Medico-Legal Symposium Vol. 37, No. 2, Winter, 1965; "Medical Malpractice," Institute of Continuing Legal Education, Hutchins Hall, Ann Arbor, Michigan.

The reason that I make this blanket statement is because I think we might see a development in the now existing area of informed consent where a jury will be permitted to answer the question as to whether or not the consent was informed and that they will be permitted to make this determination without the assistance of expert medical testimony. In an article which I wrote in the University of Colorado Medico-Legal Symposium, cited above, I took the position that the burden of proof in proving whether or not a consent was informed or not rested with the plaintiff and that in order to establish this burden the plaintiff had the obligation of producing expert medical testimony on that point. There is a sharp split of authority on this matter today; some states take the position that the plaintiff need not produce expert medical testimony as to the practice in the community relative to the requirement of disclosure. Other states say that expert medical testimony is required. By way of example, we do not normally advise patients that there is a small risk of death from anesthesia in the doing of a surgical procedure and that as I view the law today it is incumbent upon a claimant to prove by expert medical testimony that failure to give such warning falls short of the standards in my com-

munity, but by way of reiteration there is case authority to the contrary. This seems to be unfortunate in that it permits a lay jury to practice medicine to some extent but as unfortunate as it may seem, it is not unpredictable that the law will develop toward that conclusion.

The second area of developing law involves vicarious liability, the so-called "Captain of the Ship" doctrine. This subject is annotated in 85 ALR 2d wherein the entire field of liability for someone else's act is discussed.

As the traditional master-servant doctrine invaded the operating room, interesting questions arose involving the extent of the first surgeon's liability for others in the operating room, i.e., the nurses, the assistant surgeons and the anesthesiologist. An interesting decision has come out of one of the District Courts in Colorado holding that a hospital was not liable for the negligence of their resident doctors in that such residents are licensed to practice medicine and under the Colorado Medical Practice Act hospitals cannot practice medicine. The rationale applied by the District Court is that if the hospital cannot practice medicine, afortiori it cannot practice nursing and by this reasoning the hospital is not liable under the usual employer-employee relationship to the vast relief of the hospital's insurance carrier. The trend seems to be away from the vicarious liability and individuals are more commonly being held accountable for their own conduct. Obviously as between the M.D.-anesthesiologist and the M.D.-first surgeon it is not reasonable to hold the surgeon accountable for the acts of his colleague-anesthesiologist where there is no control exercised by the surgeon over the anesthesiologist. Most of the other fact situations are covered in the annotation I have referred to above, and rather than discuss each and every situation, I suggest that those of you who have cases of interest in this area refer to that annotation.

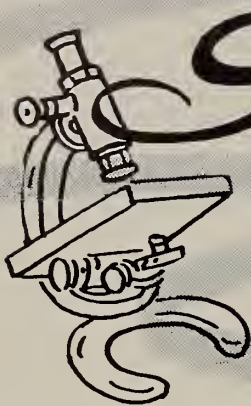
Of particular interest to the practitioners of medicine in the small communities is the development requiring the use of frequent consultations. I suggest to those of you who practice in the small community that, where indicated, consultations are required and the failure to obtain consultations may amount to professional negligence. With the speedy transportation that we have in this country, the small town practitioner cannot safely rely on his imperfect skill in doing a procedure on the premise that specialists are available only in the large city. It is evermore incumbent upon him to refer

difficult elective cases to major urban centers for the doing of the difficult procedures where he knows the procedure can be done with greater facility and with greater expertise than he can do it. The less skilled physician in the small community will be held accountable for his elective failure if the failure could have been avoided by referral of the patient to the more skilled specialist in the urban center.

It goes without saying that in order to defend oneself against the claim of professional negligence, one must have necessarily kept and retained adequate medical records. In a letter sent to all of its insured physicians, a local insurance company made the following comment: "If the hospital notifies you that an attorney has requested a copy of the hospital records on an admission for a dissatisfied patient, please notify your insurance company at once. Your company will then advise you as to whether to give your consent." I should like to call to your attention the fact that under the laws of most states the records of the hospital are not the doctor's records nor the hospital records nor, *in toto*, the patient's record. The paper and the paper clips and the ink are the property of the hospital or the physician. The information contained in these records is exclusively the right and the property of the patient. So that in the keeping of records, particularly the doctor's notes in the hospital and the doctor's notes in the office, one must be aware that these records may one day be subject to close scrutiny by attorneys and jurors. Material contained therein which has no place in such records should not be there and material which should be there should be placed in these records; thus, under the rule of informed consent where one must necessarily explain the risks of known dangers to a patient, a notation to this effect should be in the records that such risks have been explained to the patient. Should a bad result case occur and thereafter a claim be made based on the lack of informed consent, the defense is readily available in the records.

The final subject which I feel deserves some mention involves that of malpractice screening plans. Many of you are no doubt aware of the so-called Pima County screening plan wherein persons who have potential malpractice suits against doctors bring their potential claims before a committee composed of doctors and lawyers for the purpose of having a determination made as to whether or not there are reasonable grounds to believe that professional negligence has been committed. Colorado had re-

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Scientific

P A P E R

MALPRACTICE CLAIMS

Dan Hoffman

MR. WILLIAM PORTER: In this afternoon session of our biennial meeting we have for our first afternoon speaker a man who really has compiled quite a phenomenal record. His biography is interesting, his biographical sketch is literally a page long and it is all very substantial. For his thirty-five years of age, Dan Hoffman has compiled an enviable record as a trial lawyer and as one of the partners of the firm of Kripke, Hoffman and Friedman of Denver, Colorado. Just as some highlights, Dan has been a guest lecturer at the University of Colorado School of Law for three years, participating in their medical-legal evidence seminar. He has been a lecturer for the State Bar Refresher Course at the University of Denver. He has been a panelist in a number of states handling areas in the law that he basically will deal with here for us. He is a past National Committeeman of the American Trial Lawyers Association; past president of the Colorado Trial Lawyers Association; past Grievance Committee member of the Denver Bar Association and many other activities in Bar work. In 1965 Dan was designated as a nominee for one of the ten outstanding young men in America by the Junior Chamber of Commerce which is a signal honor. I give

you now Dan Hoffman with the plaintiff's attorney's views in malpractice actions. I might also add, if I may Dan, his practice is somewhat unique to many of us. Dan's firm specializes, and I mean they handle only actions involving personal injuries. If you wanted to form a corporation you'd have to go some place else other than his firm. As I understand it they handle only matters, lawsuits involving personal injury. Dan.

DAN HOFFMAN: Let me begin by saying that I sincerely appreciate the invitation to come up here, but so that it will at least in some way be meaningful, let it be understood, but with sincerity, that I am not here to accommodate the philosophy of doctors nor what I think in many respects is a lack of responsibility of the Bar Association with respect to professional responsibility litigation. No doubt what I'll say will draw some criticism and I only ask that we understand that what I say, I say from the bottom of my heart and hope that you will likewise respond to the panel discussions subsequently.

I think there is a feeling among doctors that lawyers really, literally, delight in filing mal-

practice cases and that the few who do involve themselves in such litigation, probably need a little psychiatric workup because of some neurotic disposition with respect to fellow professionals, so I begin my observations by saying this to you: When a profession is inept in policing itself and that is I believe a reasonable observation of the medical profession and equally a reasonable observation of the legal profession, then I think it behooves some of us who have trained ourselves to be gadflies and to act as an external pressure on our professional brethren and I would say the same thing about our relationship to the auto industry in terms of safety design; I'd say the same things about other manufacturers in terms of machinery design. When a segment which has a public responsibility fails, as I say, in internal policing in a large measure then I think the community desires to have external pressure applied and so I take malpractice work seriously. I think I try to meet the responsibility seriously, knowing that in that capacity, I am acting as a gadfly, no better, no worse.

In my initial remarks, I will speak primarily to the doctors and I will then change paths later on in addressing myself to the attorneys.

As I say, I think sometimes there is a feeling that attorneys delight in a malpractice case. Nothing could be further from the truth. There is simply no tougher lawsuit than malpractice, without fear of contradiction, in terms of difficulty, tediousness and responsibility with perhaps the exception of a massively complicated securities case or perhaps the defense of a person who is on trial for his life. But outside of those instances the preparation, investigation and the enormity of the responsibility in a malpractice case tends to be frankly overwhelming and it is certainly quite the opposite of a casual, delightful experience.

When we know we are about to have an interview in a malpractice case there are certain generic principles and certain experiences that are so obvious that I think a lawyer who does this can't help but reflect upon them. Number one — he knows that the client, unlike most instances, will provide very little assistance. Both Dr. Johnson and Mr. Mossberg stressed the fact that there is a tendency to emphasize the bad result and this is precisely true in terms of the interview. The client and your former patient certainly knows what he thinks is wrong with him now. He may have, at best, the vaguest notions of why, but certainly not like in terms of other fields of law where you get a detailed

explanation from the client and where the client really provides assistance; in fact, normally and in other forms of litigation, he has far more expertise in the subject matter of his claim or grievance than the lawyer has. But in the field of malpractice you can fairly well predict as a safe generality that the client himself will provide very, very little insight into the ultimate problems that you are going to face. He can just about tell you he senses the grievance, he is emotionally involved, and he has a hell of a lousy result and this then becomes one of the problems in dealing in a malpractice case — the inadequate assistance from the client himself.

The second presumption one begins with is that malpractice does occur and rather frequently and that we see far less in our office than does occur; and often we see the cases where there really is no malpractice at all, and I don't think this is a condemnation or criticism of the world of medicine. We are human beings, we are not gods and whether we are architects, lawyers, plumbers or doctors we are simply prone in everyday experience to make mistakes and as we pointed out some of those mistakes fall within the tolerance of mistakes permissible by law and others fall outside the spectrum of mistakes which the law takes cognizance of. But we start an interview, not with the cynical observation that this is probably another cranky patient but at least from a position of neutralism where this may well be a case of malpractice. I think the accusation of malpractice, when it comes to that, should not be taken, and it so often is, as an attack on the total integrity of the doctor or that he is completely inept . . . regularly and daily. It simply is a recognition that if you practice twenty-five years in a complex and difficult profession you are not super human and will make mistakes and damn it, that's what you have insurance for. So we start each interview attempting to be objective, not being cynical, and start from zero and build either to plus' or minus' as we carry through the investigation.

As a third principle, we recognize that there is a conspiracy of silence and I have no hesitancy to use the word in South Dakota or Washington or Texas or Colorado or any other state of the Union and again I don't think this is really a condemnation as much as it is a recognition of human behavior. Lawyers have no less a conspiracy. They are simply sued less. Other professions in varying degrees have lesser degrees perhaps of conspiracies of silence. So I don't think this is necessarily a point of ultimate

condemnation but as I say simply a recognition of human behavior. You're in a town where there are five doctors and three lawyers. It is very understandable to me that you are hesitant to appear in that community and testify against a friend even if you believe they are guilty of malpractice. This is not bewildering, but it is a fact and the conspiracy of silence provides therefore enormous difficulty in obtaining factual data. Mr. Mossberg and Dr. Johnson were commenting about frequency of litigation and I observed to Roger at lunch that who knows how many suits are started and filed because the lawyer has written the physician and says: "We are making an inquiry and not an accusation. We would like to get together with you, your insurance representative and your attorney, at your convenience." That letter is turned over to the insurance company invariably as it should be. The next step is that you find that nobody will let you look at the hospital records in 99% of the cases and there you sit with the bad result, with an intuition about the matter, and a total inability even to look at the hospital records which are going to be accessible sooner or later. If they provide justification for the conduct of the doctor, perhaps the suit could have been avoided by a conference with all concerned parties and if they don't provide justification but provide insight as to malpractice then they should be discovered and there should be compensation to the plaintiff. To summarize at this point, I make this observation: That along with getting little assistance from your client, knowing that malpractice can and does occur and knowing that you are going to meet a great stone wall, you face three great problems in potential malpractice cases.

The fourth problem is the tedious research in a foreign language. If you're going to adequately investigate the problem and you know you're going to get little assistance from either the physicians in your community or from your client, you then have to go to source material itself, and as a lawyer you are reading in a language which is foreign to your own training even if you find the proper material. I don't know how strict they are in South Dakota but in Colorado the medical libraries are for doctors and they have cards and unless you're going to pass yourself off as a doctor or sneak into the library that facility is not for the lawyer or the lay public. It is for the use of the doctor, so that the lawyer has, unlike any other simplified factual problems within his spectrum of knowledge, a long laborious, tedious process of analysis.

The lawyer in a malpractice claim has still another problem. Unlike almost all other forms of insurance where the carrier can settle with the consent of the named defendant, invariably every malpractice policy provides that the doctor must also consent as well as the carrier. Behind the scene, in a great many cases, is the defense medical committee or whatever name it has, which has screened the case without the benefit of comment from the plaintiff's attorney, without even the benefit of seeing the claimant himself, and simply makes their analysis on the basis of what is presented by the defense insurance attorney and the doctor himself. Their role in suggesting whether settlement should be made or not becomes another hidden force in the case. You are dealing with multiple personalities, both institutional and personal, in obtaining a settlement in a valid case. Quite often the company is willing to settle. They see a shade of gray or an area of gray. They see exposure and the doctor says there will be no settlement for whatever emotionally responsive reason he has. On the other hand the doctor may say "I want out of this thing. I want a fair and reasonable settlement," and the company sees the legal point and refuses settlement. You have this additional problem, unlike most insurance cases, of getting multiple consent in order to wind up your problem.

Lastly, and particularly true in the small rural communities, you're not going to get much help from local counsel. Again quite often the doctor and the attorney in a small community are friends; they are peers of the community; they are active together civically; they are active together socially and it is quite often impossible to get assistance from a man in the community in which a trial is to be held. You come as the big city slicker and there is the insurance company counsel with the local attorney in the community sitting there helping to select a jury. All of these things of course are generalizations and they are all subject to exceptions. I simply say that in terms of interviewing a potential malpractice case, anyone who does this with any degree of regularity can't help but have go through his mind these various problems and principles and it is very easy therefore to say "Let's just forget it and let's not become involved in an unpopular cause. Let's not draw the ire of our brethren profession and let's let somebody in Tulsa or in Minneapolis or in Denver or in Oklahoma City or in Dallas come up here and worry about the case." As a matter of fact,

and I think the lawyers know this is a fact, because we quite often get referrals from small communities from the attorney who says "I think there is a hell of a malpractice here but for heaven's sake don't involve me, don't mention my name, don't say I sent it to you" — and after a while you get used to this type of hypocrisy.

Now I think that historically the doctor who feels he has been "put upon" has received enormous protection from the courts. The incidence of successful plaintiff's verdicts at the Supreme Court levels in most states are minimal. Most states like South Dakota have a "good Samaritan law" which was brought about by AMA pressure. It is a fact that there is not an appellate decision in the United States of America in which a doctor has been held guilty of malpractice in rendering emergency roadside assistance. It may be that there have been occasional settlements in such situations. It may be there have been occasional verdicts at the trial court level (none of which I am personally aware of); but I say to you that the doctor who feels he couldn't render roadside assistance because of this enormous exposure is living in a world of fantasy and myth in which he feels jeopardized when the facts are completely contrary. The reason I point this out is that there are now developing changes which tend to favor the plaintiff and I think Mr. Mossberg indicated that he felt the courts were beginning to move in the direction which is less favorable to the physician. But I want to point out that we didn't start from zero in this movement. The doctor started from a position of overprotection. If one understands that the rule historically had been the only way to prove a malpractice case was by an expert in the same community, one can understand why the doctor was overprotected because it was and is almost impossible to ever obtain the necessary evidence "to go to a jury," no less obtain a successful verdict.

I'd like to spend the rest of the time now turning to the lawyers to discuss some of the developments, some of the problems, some of the sophistications in trends and tendencies and changes in the law. I will mention parenthetically generalized citations so that if you run into the problems you certainly have a point of reference or research. Now I think one of the duties of anyone who takes and believes that there has been an act of malpractice, is to obtain adequate compensation for your client, and if you're worried about protecting the doctor's reputation at the same time then don't take the

case in the first place. But if you take it as an advocate and believe from materials at hand that the doctor is responsible for an abridgement of his responsibility then there's only one person that you worry about and that's your client.

Now one of the areas of expansion which is being fought in many, many states — successful in some and not successful in others — is the geographical expansion of the area from which to draw expert witnesses. There are three rules which can be applied. One is that you obtain expert testimony from the same community. That is the classic and archaic rule applied in some states. Another rule which certainly seems on the surface to be fairer is that you must obtain expert testimony from one who practices in a similar community. Now this then does provide for a geographic expansion of the source of expert witnesses because you can go to a small community in Florida and present a doctor from that community as a witness in a case in a small community in South Dakota. Now even here there are distinctions among the decisions of states, following this position. For example, who carries the burden of proof of proving the similarity? Is the similarity assumed by virtue of population and general geographic location? Some states say "yes," other states say "no." Does the plaintiff have specifically the burden of proving, for example, there are approximately the same number of doctors in both communities, that there are approximately the same number of people in both communities, that access to major metropolitan areas is approximately the same in both communities, that the population is approximately the same, — so you see there is this disagreement as to who and how one proves similarity.

Now the third rule which is the most expansive rule is that there is, in fact, a national standard and I would subscribe to that view in the case of a specialist only and this is because if the specialist is board certified nationally then I don't care whether he practices in Minneapolis, New York City or Canab, Utah or Littleton, Colorado. He should have minimal recognized skills and, at least, should be held to the kinds of standards that were required in order to pass national board examinations and if he can't keep up in a day of increased communication and increased transportation in terms of increased accessibility to publications — if he can't keep up to the national standards that he once passed, then I say he's the loser, not the patient, where his knowledge and skills

fall below others who were similarly so certified.

So I think that of the three rules, certainly if you are handling a plaintiff's case, it is your obligation to fight for the broadest rule and if a man is a specialist and is nationally certified that any doctor in the United States of America who is reputable and qualified in that specialty and, so board certified, should have the right to testify in the case. I direct your attention on that problem to **8ALR 2d 772**, and what I think is the standard text in the field, **Louisell and Williams**, Section 8.06 and also to the December, 1964 American Medical Association medical-legal monograph entitled "Standards of a Medical Specialist, Local or National."

I think once again in summary, to justify the change from the rule that the only doctor who can testify as an expert is a doctor in the same community, it seems to me the intelligent rationale has to be the accessibility to medical centers, the ability to go to national conventions by jet in a few hours, the ability to pick up telephones, the ability to watch television, the ability to read — all of these techniques now bring and make what was once geographically an enormous distance, few hours away and the excuse that the horse and buggy doctor had fifty years ago is no longer a practically applicable excuse.

The second problem plaintiff has is that even if he can expand geographically his source of experts, he should also attempt to cut across specialty lines and schools of medicine lines where applicable. Many states have taken the position, for example, that only a neurologist is qualified to testify in a case involving a neurologist; and only an orthopedic surgeon is qualified in a case involving a malpractice claim against an orthopedist; or only an osteopath is qualified to testify in a case against an osteopath. I think if law is to have meaning and to provide a vehicle for justice, this is insane rot. If in fact the type of surgery is generic and common, such as a tonsillectomy, such as the setting of an undisplaced fracture, there are many specialists who are competent and capable of doing this and I think, there are certain basic minimum considerations and at least everybody ought to be held to those basic minimum considerations. I would suspect the general surgeon can adequately comment on those basic minimums as can any general practitioner, if he is qualified, and if he has performed tonsillectomies, or if he has set undisplaced fractures. You don't always have to be a radiologist to see

a fracture that was missed. I say there are instances where the plaintiff's lawyer should fight not only to expand the geographical source of expertise but to permit the crossing of fields. It is much more difficult to obtain expert testimony from a urologist in South Dakota against another urologist than it is to get an osteopath who does urology to make an observation about a medically, licensed doctor. Each of these situations has exceptions and has to be individualized and there has to be a basic qualification, but this subject is discussed at some length in several annotations, 85 ALR 2d 1022, 54 ALR 860, 78 ALR 697 and in **Louisell and Williams**, Section 708. These annotations cover the problem of crossing schools of medicine and of crossing specialties where qualified and providing the base for expert testimony.

A third area to expand the techniques and methods of proof, is to use the defendant as his own witness against himself and this can be done in some states and not in others because there is a split of authority as to the propriety of providing hypothetical questions to the defendant himself, and asking him to assume the truthfulness of those facts and then give an opinion. For example, and I'm not going to refer to my own cases, nor is it important whether we won, lost or settled, but illustratively we represented a young boy who had classic symptoms of osteomyelitis: dehydration, streaking, hallucinations, fever, no history of a traumatic injury, swelling. The mother says she told this to the physician. The physician says when I saw the boy he had a slight swelling; the parents said they thought he might have tripped on the playground, but the boy didn't have fever then or any of the other symptoms, nor did the parents relate any other symptoms. Now here's the factual issue: I'm not God, I don't know whether the mother was telling me the truth any more than the insurance company knows whether the doctor was telling them the truth, therefore you ask the doctor on depositions: "Doctor assume that when the mother brought the child to you she told you that the child had hallucinated, had delusions, was dehydrated, was vomiting, had had fever last night, had this swelling and she knows of no cause for it nor does the boy. In that circumstance doctor, would putting an ace bandage on be adequate treatment?" Some courts will not permit the plaintiff to make the doctor a witness against himself. I have simply suggested this is another battleground that is being fought and is a very useful one because if the doctor says "Well, if those were the facts,

which they weren't, but assuming those were, obviously a doctor who so treated the person would be negligent," then it is left to the jury to decide whether the mother's version of the history is the truth or the doctor's version of the examination and history is the truth. In this regard, 88 ALR 2d 1186 has about a forty-page discussion of the propriety of the rule in using the doctor as a witness against himself.

A fourth area of potential sources of proving a malpractice case is pretrial discovery of the experts who are going to be called by the defendant; the right to depose them before trial and to find out their opinions. Now there are a whole variety of rules. Some states say this can't be done because this relates to the defense attorney's work product or a million other rationalizations. They are paying for the expertise, and why should you have the benefit of it before the trial? Other states say, and a great many of them, you can find out the facts that the expert has been provided with or discovered but you cannot obtain his conclusions before the trial and other states say you can go the whole route with complete discovery. After all, the principle of the federal rules of civil procedure, as adopted in many states, is not to play Perry Mason but to encourage settlement by full disclosure of all that is known by all concerned and therefore the tendency now is for the courts to say "Yes, go and find out what their experts are going to say and they can find out what your experts are going to say and see when you have all of this material if now with this material available you can conclude the case." 77 ALR 2d 1191 and 71 ALR 2d page 6 and have exhausted these questions of the ability to and in what jurisdiction and under what circumstances you may discover the opinions of, and the names of those persons who will be experts. I say there are a variety of shadings of opinions in different states and you'll have a work product thrown up, privilege and several other legal doctrines which come in opposition to the principle of full discovery.

The fifth area and one which is just exploding in almost every state now — Can you find out what was said by the Medical Grievance Committee, by the Tissue Committee or by a screening panel? There is no privilege that I have ever heard of by statute or common law which gives doctors in a room where they close the door any more privilege not to disclose what was said than an anti-trust act where the presidents of oil companies get together behind closed doors and render certain opinions. This is why most Tissue

Committees don't report their findings. They get "spooked" about recording their opinions in writing. Some states have held that this is privileged. Other states have held that the facts that were discussed at a Tissue Committee meeting are discoverable, but not the opinions; which is the classic, "hear no evil, speak no evil game" that I think we're trying to avoid in a "discovery" legal atmosphere. But many lawyers who subpoena hospital records aren't even aware of the fact that among the records he's not going to get, even if there were any, are Tissue Committee records or complications chart conference meetings that are held in almost every hospital and where every death is discussed at great length. These things don't come "down the pipe" when you subpoena all the hospital records because the hospital treats them as not being part of the hospital records. So if you're doing discovery, you better specifically ask the defendant whether he knows if there was a Tissue Committee discussion or complications discussion at the hospital or staff meetings on a regular basis and then force the point of law for full discovery in your own state. Now maybe you have decisions here, I don't know, but in most states these battles are just now sifting up to the Supreme Court. The issue is the accessibility, the ability to force a man who sat on that Tissue Committee to say "Yes, this was my opinion based on these facts"; and why shouldn't he be forced to say this if this was his honest opinion?

Another area and I don't know why, the words "*res ipsa loquitur*" has such an effect on the doctors and lawyers who tend to think of the doctrine as something unique or something special. It is nothing more than three Latin words being applied to the principle of circumstantial evidence. It is a method of indirect proof. It says if you had a tonsillectomy and come out blind somebody ought to explain how this happened because the circumstances create an inference of negligence. That's all *res ipsa loquitur* is on the surface. It is a method of circumstantial proof. You go to have your tonsils out and come off the operating table and you wake up with a fractured leg. You ought to be able to say the circumstances suggest negligence and gee whiz I think the doctor and the nurse ought to come in and tell me how this happened. Is this a risk of a tonsillectomy? One of the fascinating byplays of the use of *res ipsa loquitur* is the trap that you can put the defense in when you're also pleading informed consent because they are diametric opposites. In *res*

ipsa loquitur you are saying that this ordinarily does not occur in the absence of negligence or adversely that this injury is hypothetically consistent with negligence and basically is not consistent with non-negligence. It is not an ordinary risk of the procedure. On the other hand informed consent says by way of defense that this was an ordinary risk. This is an ordinary hazard of the procedure. *Res ipsa* effectually says the reason we think there might be negligence is because the result is so extra ordinary and on the other hand "informed consent" says the result is an inherent risk of substantial nature. I take issue with my friend Mr. Mossberg who creates the image for the doctor that we lawyers are stupid and idiots and that you've got to sit there and explain every risk of the proposed medical procedure. What the law says is if you're going to treat somebody for cancer and use cobalt then you've got to tell them they may die from cobalt which has its own substantial risks as well as the cancer, and you're not God. It is their body and let them choose whether they want to die from cancer or possibly get cured, but undergo the hazards of cobalt; and if I want to put up with my ulcers without a resection that's my life and decision. One of the reasons that informed consent is philosophically developing is because the lawyer, the minister, and the doctor are no longer the sole intellectual peers of their community. There are many other people now who are equally intellectually alert and as a result the law is beginning to say, let these people make their own decisions about their own lives. If a guy wants to die with ulcers, if he wants to put up with chronic low back condition rather than have a fusion that's his choice and you better sit down and tell him what the substantial dangers are in your recommended treatment. I think sometimes the doctor feels that the patient is in his hands; he's the doctor. The patient permits the doctor to act upon him under given circumstances and under limitations which he may impose because it is his life.

Now in *res ipsa* the premises are obvious. Number one, that most of the reasonable hypothesis must be consistent with negligence rather than non-negligence. That the patient himself was not a contributing factor; that the subject instrumentality was in the control of the defendant. But there are a complexity of rules in which the states differ in application of *res ipsa*. For example, some states say that *res ipsa* applies when there is a single defendant. Other states say *res ipsa* can apply when there are

multiple defendants (on that point I direct you to 82 ALR 2d 1262 and 38 ALR 2d 905). I would think that as we see the dissipation of the "Captain of the Ship" philosophy and I think rightly so, because I think it is unfair to put the surgeon who has his complex responsibility in the position of being liable without fault on his part for the acts of the anesthesiologist and other people in the surgical room who have their individual professional responsibility and who as a matter of fact can reject the order of the surgeon if it violates their own concept of what is required because they too are professionals; then I think it is logical to assume that there will be an extension of *res ipsa loquitur* in most states to say: "Here were four men in the surgery. All I know is I walked in to have my appendix out and I came out with a seven-inch cut across my face and I want to apply *res ipsa loquitur* to all four of these people." And it seems to me a logical absurdity to say "No, *res ipsa* only applies to one person but cannot apply to a multiplicity of defendants," and as I say, as the "Captain of the Ship" doctrine dissipates itself I think we can anticipate an extension of *res ipsa loquitur* to multiple parties who had relationships to the happening of events. The second big fight now going on in many states is whether you can use *res ipsa loquitur* and expert testimony in conjunction with it. Most states say no. Most states say that the very basis of *res ipsa loquitur* is that a lay person, by the exercise of his common sense and experience can judge, and is capable of judging, that there must have been malpractice. Some states however take the position that you can use expert testimony negatively in conjunction with *res ipsa loquitur*. That is you can have an expert who doesn't say that in his opinion the defendant was guilty of malpractice based on a violation of community or similar community standards but just the opposite. He is saying, on the other side of the coin, that this result does not happen ordinarily in the absence of negligence: "I don't know what happened specifically, I wasn't there, but I can tell you this as a doctor who has performed this operation seven hundred times or fourteen thousand times that this result is normally not obtained without negligence." Now this is the battle — some states say no, you can't bring in that kind of testimony. On that particular point read 82 ALR 2d 1262.

Another problem discussed at 33 ALR 2d 791 is if you choose to use *res ipsa loquitur* and are successful in having the judge permit *res ipsa* to go to a jury can you also plead specific negli-

gence. Some states say "no." Historically the answer was "no," but I would say now today the majority of states say "yes."

The last problem with regard to *res ipsa* is "What is the effect of its use?" And here the states have as many rules as you can dream up. In some states *res ipsa* creates an inference. Now it wouldn't happen but assume the doctor put on no evidence at all. He could still win the case in the "inference" states because the jury could choose to inject the inference and the burden of proof remains with the plaintiff. In some states *res ipsa* creates presumption — perhaps in the majority of states. Here the doctor would have to come forward with some explanation because there would be no evidence to overcome the presumption and therefore the plaintiff would have sustained his burden of proof. Colorado, Iowa, Louisiana and Arkansas take the position that the entire burden of proof shifts to the defendant. Not only the burden of "coming forward" but the entire burden of proof shifts (although as a plaintiff's lawyer even I disagree with this). I think this is notorious social engineering by a Supreme Court when in a given field of endeavor, the Supreme Court changes the total burden of open responsibility for proof so I would think the fairest rule would be to at least call the creation a presumption which then forces the defendant to come forward with some satisfactory explanation even though the plaintiff maintains the ultimate burden of proof.

The last area which I think deserves consideration as one approaches a malpractice case is the use of books. Most states today do not permit, as you know, the plaintiff to use standard medical texts in cross examination if the doctor says the nine magic words "I do not recognize the book as an authority." I had a situation which Dr. Johnson is familiar with, a case involving the author of a medical text as a defendant. A professor who had gotten editorial comment for his assistance in preparing the book, who had worked for defendant for twenty-two years, smiled at me on the witness stand when we were asking about the defendant's own text book used in twenty-three medical schools and said "I do not recognize my boss's book as authoritative." I am pointing out that we have reached a point of absurdity when a man can cynically sneer at you and say he doesn't recognize this portion of a book as authoritative which book is in his library, which book was used by him in school, which book he teaches from when he teaches at the school and

I should think we should all strive in an honest approach to some liberalization of the present rule in most states. I don't say that a doctor should be at the mercy of any textbook written at any time by any other person with whom the defendant may seriously disagree but certainly there should be some discovery methods of reaching a compromise as to a reasonable approach to the use of medical texts in the process of cross examination. At least the plaintiff should be able to ask the doctor "Why, doctor, do you disagree with the statement found in a book used in thirty-seven medical schools or which has sold four million copies to doctors, not lawyers." So I think here is an area of potential liberalization and the one state that has done it effectively is Massachusetts which now has a special statute and formula relating to use of books, which other experts testify are standard texts and at least require the defendant to make some explanation.

Now, in conclusion, I simply say that many of these areas, the problems dealing with *res ipsa loquitur* with the multiple defendants, use of expert testimony in conjunction with it, pleading specific negligence, geographic expansion of the source of experts, crossing specialty lines with schools of medicine lines, would appear, I am sure, to most doctors as being some enormous movement now to put them at disadvantage but I would suggest honestly to you that this is an attempt to create an equilibrium that has never existed in terms of the plaintiff's ability to investigate and inquire about and prove the case. Along with the other speakers, I certainly think both the Bar and Medical Association in any state, owe themselves an obligation to investigate the Pima County Plan. I think you should investigate the Pima County Plan and there ought to be more interchange between medical and law schools. More students ought to have some basic medicine as a law school elective and every medical student ought to have a good solid legal-medical course and not taught by an insurance company attorney. Now I think there should, on a county level, be more study group interchange between lawyers and doctors and I certainly think the type of thing that is being done today ought to be done on a continuing basis with a "real coats off, ties loosened up approach" and let us say what's on our mind and either confirm our opinions or be somewhat persuaded that perhaps we are somewhat wrong in our basic approaches to a given problem. Thank you very much.



"All Interns are Alike"

It stands to reason. They all go through the same training; they all have to pass the same tests; they all have to measure up to the same standards; they all are underpaid, too. Therefore, all interns are alike.

That's utter nonsense, of course. But it's no more nonsensical than what some people say about aspirin. Namely: since all aspirin is at least supposed to come up to certain required standards, then all aspirin tablets must be alike.

Bayer's standards are far more demanding. In fact, there are at least *nine specific differences* in-

volving purity, potency and speed of tablet disintegration. These Bayer® standards result in significant product benefits including gentleness to the stomach, and product stability that enables Bayer tablets to stay strong and gentle until they are taken.

So next time you hear someone say that all aspirin tablets are alike, you can say, with confidence, that it just isn't so.

You might also say that all interns aren't alike, either.



ABSTRACTS ON TUBERCULOSIS AND OTHER RESPIRATORY DISEASES

(Issued by the National Tuberculosis Association)

June, 1967 — VOL. 40, No. 6

PULMONARY LESIONS AFTER OXYGEN THERAPY AND ARTIFICIAL VENTILATION

Lungs of patients who died after prolonged artificial ventilation revealed a common denominator of pulmonary changes in many of those studied. These changes were correlated with the duration of exposure to high concentrations of oxygen and pathologically were similar to those seen in experimental oxygen toxicity in animals.

Clinicians concerned with the care of patients requiring mechanical artificial ventilation have been impressed by the occasional development of gradually progressive deterioration of pulmonary function, apparently unrelated to the disease that necessitated the respiratory assistance.

These patients have increasing reduction in pulmonary compliance and vital capacity, with subsequent hypoxia; are difficult to wean from the ventilator and often die of pulmonary insufficiency. Clinicians have referred to this symptom complex as the "respirator lung syndrome." This study was undertaken to determine whether there is a corresponding pathological picture and, if so, to characterize it and attempt to determine its pathogenesis.

Lungs of 70 patients who had come to autopsy after prolonged mechanical artificial ventilation were compared with lungs of comparable patients who had not received such therapy. Combined lung weight and descriptions of the gross appearance of the lung were obtained from the autopsy record. Slides of specimens were reviewed independently of the clinical background of the patients.

The lungs in the study group tended to be much heavier than those in the control group. Study group lungs had an average combined weight of 1697 grams as compared with an average control weight of 1176 grams. This difference was highly significant.

"HEAVY LUNGS"

Study group lungs weighing more than 1800 grams ("heavy lungs") were frequent. They tended to be deeply congested, inelastic, non-crepitant, and of markedly increased con-

sistency, with the appearance of "beefy" consolidation on cross section. The few heavy control group lungs did not have this appearance, but were typical of either "watery" pulmonary edema or extensive nodular and confluent bronchopneumonia.

Study group lungs frequently showed several unusual microscopic changes which did not appear, or appeared rarely, in control lungs. There seemed to be two microscopic phases, which merged and were not distinct. An early exudative phase was characterized by congestion, alveolar edema, intra-alveolar hemorrhage, and a fibrin exudate, with the formation of prominent hyaline membranes without an associated inflammatory component.

A later proliferative phase was characterized by marked alveolar and interlobular septal edema and fibroblastic proliferation, with early fibrosis and prominent hyperplasia of the alveolar lining cells. The alteration was associated with only a mild-to-moderate component of lymphocytes without evidence of infection. This histologic pattern was distinctive and did not resemble either organizing pneumonia or the dense collagenization of septa often seen in association with emphysema or postinfective scars. This severe interstitial edema and early fibrosis were present in 23 cases in the study group and in only one in the control population.

FACTORS CORRELATED

When the gross and microscopic pathologic findings were correlated with the clinical data, it became apparent that they were not related to the duration of artificial ventilation per se. They were, however, correlated with prolonged ventilator therapy when high (90 to 100 per cent)

Gerald Nash, M.D.; John B. Blennerhassett, M.B.; and Henning Pontoppidan, M.D. *The New England Journal of Medicine*, February 10, 1967.

concentrations of oxygen were used. The data suggested that as the duration of treatment with high concentrations of oxygen increased, so did the incidence of "heavy lungs" (combined weight over 1800 grams), hyaline membranes, interstitial edema, and early fibrosis. Since the use of the respirator was not correlated with production of the pulmonary lesion, the term "respirator lung syndrome" is probably a misnomer.

Experiments have shown that oxygen in high concentrations (exceeding about 0.6 atmosphere) is toxic to the lungs of a variety of animals; the pathologic picture in these animals closely resembles that seen in the exudative phase in the patients in this study. The proliferative, fibrotic phase has no known experimental counterpart. For obvious reasons, the experimental exposure of man to toxic levels of oxygen has not been carried to the stage of severe pathologic damage.

Isobaric oxygen (100 per cent oxygen at 1 atmosphere) has caused symptoms such as substernal distress, cough, and decrease in vital capacity in persons exposed for periods of approximately 6 to 30 hours. Pure oxygen at a reduced pressure of about 250 mm. of mercury has been breathed by normal men for up to 30 days without producing pulmonary changes, and many observers have stated that man could probably tolerate oxygen at partial pressures below 425 mm. of mercury (approximately 60 per cent at 1 atmosphere) indefinitely without the development of symptoms of oxygen toxicity. However, more recent reports have des-

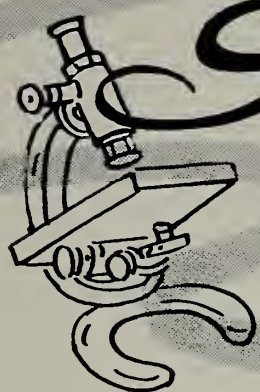
cribed the development of symptoms of oxygen toxicity after prolonged exposure to oxygen tensions as low as 176 mm. of mercury.

The morphologic alterations found appear to provide an explanation for the marked deterioration in pulmonary function observed during life in most of these cases and might account in part for the difficulty in weaning such patients from artificial ventilation. Both oxygen concentration and the duration of exposure appeared to be important factors in the development of the pulmonary lesions.

MONITORING INSPIRED OXYGEN

It should be emphasized that this study has not established a definite cause and effect relationship between the characteristic pathologic appearance and any facet of therapy. In view of the severe and complicated pathologic states encountered and the multifaceted treatment invariably required in such cases, many etiologic factors could theoretically have been responsible for the pathologic changes. However, although safety limits for the administration of oxygen in man have not been determined, the use of 90 to 100 per cent oxygen for a prolonged period is probably hazardous.

Optimal treatment demands the use of oxygen concentrations sufficient to insure normal or near normal arterial oxygen tension. Such therapy should not be withheld for fear of possible toxic effects on the lungs or other organs, but the inspired oxygen concentration should be monitored and reduced as soon as arterial blood gas measurements show that the reduction can be accomplished safely.



Scientific

PAPER

WHAT CONSTITUTES THE DIAGNOSIS OF THYROIDITIS?

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I. Introduction—Purpose—History

Thyroiditis, once an obscure disease, was seldom a clinical consideration prior to the turn of the century. In 1912, Hashimoto published his original article describing a disorder which now bears his name.⁵ Since that time more attention has been paid to this entity; as a result more sophisticated laboratory and clinical features have been sought.

Thyroiditis exists in several forms. Williams classifies the disease into three main categories, each of the categories having a number of synonyms.⁶ They include Hashimoto's disease (Hashimoto's struma, struma lymphomatosa, lymphadenoid goiter, chronic lymphadenoid thyroiditis), acute non-suppurative thyroiditis (de Quervains thyroiditis, granulomatous thyroiditis, giant cell thyroiditis, giant follicular thyroiditis, and subacute thyroiditis—chronic fibrous thyroiditis, Riedel's struma, woody thyroiditis, ligneous thyroiditis, invasive thyroiditis). Williams considers the above types autoimmune diseases. Those types which are not autoimmune in nature are of specific etiologies, including: syphilis, tuberculosis, and

pyogenic infections. No attempt is made to classify the types of thyroiditis included in this study. The purpose of this paper has been to determine just what constitutes the diagnosis of thyroiditis in the minds of clinicians involved in dealing with this disease at KUMC.

II. Method

This study is based on a retrospective review of thirty patients taken from the records at KUMC between the years of 1955 and 1965. Not every case of thyroiditis for these years is included in this group, but it does include the majority. The thirty charts were reviewed with the intent of gleaning from each the basic facts which prompted the final diagnosis. No attempt was made to validate the clinical judgment recorded in the chart. Material from each case was divided into historical, physical, and laboratory findings of importance. These are listed in tables I, II, and III respectively. Only qualitative results are indicated. No attempt was made to treat the data in a true quantitative manner. Of the thirty cases studied, a group of eighteen was diagnosed by surgical pathology with no consideration of the hospital work-up and lab-

Table I. Pertinent Findings in the History

Case number	Mass in neck	Symp-toms of myxe-dema	Symp-toms of thyro-toxicosis	Neck or throat pain	Dys-phagia	Fever
1	+	+			+	
2	+					
3			+			
4		+				
5	+		+	+	+	+
6	+		+	+	+	+
7	+		+	+	+	
8	+		+	+	+	
9	+			+	+	+
10	+	+		+		
11	+	+		+		
12	+			+		+
Totals	10	4	5	8	6	4

Table II. Pertinent Findings on Physical Examination

Case number	Enlarged thyroid	Findings of myxe-dema	Findings of thyro-toxicosis	Tender painful thyroid	Cervical lymph-aden-opathy	Fever
1	+	+				
2	+			+	+	
3	+		+	+		
4	+	+				
5	+		+	+		
6	+		+	+		+
7	+		+	+	+	
8	+		+	+		
9	+					
10	+			+		
11	+	+		+	+	
12	+					+
Totals	12	3	5	8	3	2

Table III. Pertinent Laboratory Findings

Case number	Thyroid antibodies		I 131 uptake		PBI		Cholesterol	
	present	not present	normal	low	high	low	high	low
1	+		+					
2	+		+					
3		+	+		+			
4	+						+	
5		+		+	+			+
6				+	+			+
7		+		+				
8				+				
9			+					
10		+	+					
11		+		+		+		
12				+				
Totals	3	5	5	6	3	1	1	2

to the other twelve, this group was not analysed further. The remaining twelve represent a group whose diagnosis was made solely upon a clinical basis. No histologic confirmation was made on them.

III. Results

It can be observed in table I that the patient's history was found to be a significant clue in the clinical picture. Almost all, eighty-three percent (8/12), complained of a mass in their neck. Eight of the twelve, or sixty-seven percent, admitted to either a "sore throat" or pain in the thyroid area. Dysphagia was a symptom common to fifty percent of the group, all of whom also noted an enlarging mass in their neck. Forty-two percent (5/12) described symptoms suggestive of hyperthyroidism (patients who described two or more symptoms of thyrotoxicosis, i.e. nervousness, hyperhidrosis, heat intolerance, palpitations, weight loss, tachycardia, etc.), and thirty-three percent (4/12) gave a history of possible hypothyroidism (patients who described two or more symptoms of myxedema, i.e. cold intolerance, weakness, dry coarse skin, lethargy, slow speech, edema, etc.). Another third were plagued with fever prior to admission.

Physical findings of significance included thyroid enlargement in all patients, a tender painful thyroid in sixty-seven percent (8/12), findings consistent with hyperthyroidism in forty-two percent (5/12), findings consistent with hypothyroidism in twenty-five percent (3/12), cervical lymphadenopathy in another twenty-five percent (3/12), and fever in seventeen percent (2/12).

Laboratory data is listed in table III. Thyroid antibodies by the tanned red cell (TRC) technique were done on eight of the twelve medical patients. Only twenty-five percent (3/12) demonstrated antibodies while forty-two percent (5/12) were found to have none. I¹³¹ uptake studies were done on all patients. Fifty percent (6/12) had a reduced uptake; the others were in the normal range. One patient had an abnormal scan pattern. One patient had a high serum cholesterol and two had low serum cholesterols. The PBI in twenty-five percent of the patients was high while only one patient had a PBI below four uq %.

IV. Discussion

Thyroiditis, as a disease entity, has progressed from a tissue diagnosis to a condition which can

oratory data. These were surgical patients who underwent partial or total thyroidectomy resulting in the incidental finding of thyroiditis. Although many of these patients displayed historical, physical, and laboratory aspects similar

be diagnosed completely on a medical basis and managed as such. Patients with thyroiditis characteristically give a history of goiter and pain in the thyroid area. Dysphagia, fever, and symptoms of thyrotoxicosis or myxedema may be the presenting complaint. Goiter as well as tenderness over the thyroid, thyrotoxic or myxedematous manifestations, cervical lymphadenopathy, and fever are common physical findings.⁶

The twelve patients under discussion had symptoms which correlated quite well with their physical findings. They also provided a clinical picture similar to descriptions of the classical disease. Almost all patients related being conscious of a mass in the area of their thyroid; two-thirds described pain in the thyroid area; and half complained of dysphagia. All of the patients were, in fact, found to have an enlarged thyroid to palpation and two-thirds of these demonstrated a tender, painful thyroid. Only two of the four patients who complained of fever actually had a temperature elevation during their hospital course. The five patients who gave subjective complaints consistent with hyperthyroidism also displayed physical evidence for this. All but one patient who gave a history consistent with hypothyroidism demonstrated a physical basis for this. Cervical lymphadenopathy accompanied only two of the patients and seemed to make an inconsistent contribution to the diagnosis.

Thyroid antibodies, done by the tanned red cell technique, were an unpredictable finding in those patients who were tested for this. This technique is considered to be the most sensitive of several tests for thyroid antibodies.¹ The TRC technique measures the level of thyroglobulin antibodies in the serum. Red blood cells are treated with tannic acid and coated with thyroglobulin. The test serum is added and agglutination occurs if antibodies are present in titers high enough to be measured.^{1, 6} Contrary to the results obtained by other workers, less than half of the patients in this study demonstrated antibodies by the red blood cell hemagglutination technique. Thyroiditis, in some cases, is believed to be an autoimmune disease. Support of this belief is upheld by Cline, who was able to demonstrate a significant antibody titer to an extract of human thyroid gland or to human thyroglobulin in fourteen of his study of sixteen cases.³ Blizzard contends that thyroid antibodies occur in a variety of thyroid disorders including thyrotoxicosis, spontaneous

myxedema, non-toxic nodular goiter, and thyroiditis. He feels there is poor correlation between the type of thyroid disease and the presence of antibodies. Certainly his belief that antibody production is secondary to an abnormal thyroglobulin release initiated by a thyroid insult (either hyperplastic or nonspecific) is worthy of mention. He also maintains that an autodestructive process ensues affecting the thyroid in such a way to account for certain cases of spontaneous myxedema, thyroiditis, and cretinism.² Indeed, there appears to be some relationship between a patient with thyroiditis and either an under or overactive thyroid state. However, the presence of thyroid antibodies bore no consistent correlation with the thyroiditis patients in this author's study. A possible explanation for the absence of antibodies in those five patients listed in table III is found in Doniach's proposal that a low level of antimicrosome antibodies may go unnoticed.⁴ Acute non-suppurative thyroiditis characteristically has thyroid antibodies present in less frequency and in lower titers in comparison to Hashimoto's disease which demonstrates antibodies in greater frequency and higher titers. A relative dominance of the former disease in the group under discussion could also explain the low number of positive antibodies. A low I¹³¹ uptake was a consistent finding in six thyroiditis patients. Paradoxically, two-thirds of these patients had both historical and physical findings of hyperthyroidism. One third of these cases had both a low cholesterol and a high PBI consistent with the clinical picture of thyrotoxicosis. In patient number four, the high cholesterol was consistent with the clinical evidence of hypothyroidism. Patient number eleven was judged clinically hypothyroid with a confirmatory low PBI.

In conclusion, it may be stated that the diagnosis of thyroiditis in patients at KUMC is based upon significant historical findings, including: consciousness of a neck mass, pain in the neck or throat with or without dysphagia, and symptoms related to either an over or underactive thyroid. Physical evidence of a tender goiter, cervical lymphadenopathy, and findings consistent with either thyrotoxicosis or myxedema are helpful clues in the diagnosis of thyroiditis and an obvious close correlation exists between the historical and physical observations. Fever may at times accompany thyroiditis. A low I¹³¹ uptake may be indicative of thyroid inflammation and may not indicate the true clinical thyroid state of activity. Serum cholesterol

and PBI bear no consistent relationship with thyroiditis, but rather indicate the activity state of the thyroid. Thyroid antibodies were an infrequent finding in the group of patients studied at KUMC, and the TRC determination was not a primary feature in the diagnosis.

V. Summary

A retrospective study of thyroiditis was done consisting of thirty KUMC cases taken from the time period 1955 to 1965. The salient features from each case were recorded with the purpose of determining what constituted the diagnosis in terms of history, physical, and laboratory findings. Clinical observations and laboratory data were categorized. Only twelve of the thirty cases were medically diagnosed and managed; the remaining eighteen were surgical patients whose diagnosis was an incidental histologic observation post operatively. Primary features of the disease included the presence of a goiter, pain in the throat or neck, dysphagia, myxedema or thyrotoxicosis and cervical lymph-

adenopathy. Serum cholesterol and PBI reflected only the clinical picture of hyper or hypothyroidism with no direct correlation to thyroiditis, while a low I^{131} uptake seemed to indicate thyroid gland inflammation. An abnormal scan was recorded in only one case. Although previous publications indicate that thyroid antibodies are a consistent finding in thyroiditis, the group of patients at KUMC demonstrated them infrequently, and the antibody determination was not a primary feature in the diagnosis.

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PROFESSIONAL LIABILITY—

(Continued From Page 22)

juries are getting some pretty good sense. We aren't too afraid to try a case out in California any more, we win. It's like the rear-enders, the whip lash cases. We try a very high percentage of our rear-end auto cases in California now. The juries are sick of it. The rear-ender that's going to cost us \$7,500.00 in Toledo, Ohio is going to cost \$750.00 in California. Those juries have just seen enough people with a miraculous recovery following trial that they know better. They are sick of it. It's unfortunate because some people who are rear-ended are really hurt. There is no question about that and it is unfortunate that these people now have to suffer because so many other people have muddied up the water for them. But those are the trends and they are quite clearly discernible. The courts are more liberal, the juries are more conservative. Yes, Sir.

Q. I have one question here. How about the "Captain of the Ship" principle? This might enter into the gray area.

A. Generally the "Captain of the Ship" principle still applies throughout the country. There are some — there has been some

erosion of it. For those of you who don't know what this is about it is an application of the loaned servant rule. Historically, the operating surgeon had to have complete total control of everything that went on in the operating room and because of this the law followed the fact. The fact was that the operating surgeon was in control and the law followed this and says that everyone in that operating room is an agent of the doctor. So the nurse who is an employee of the hospital becomes a loan servant. The hospital is not responsible for her error. The nurse who makes a mistake in the sponge count creates vicarious liability on the part of the doctor, not the hospital. Of course, the facts have changed and the law is changing although it hasn't caught on much yet. But, the fact today is that the operating surgeon is not in complete control of that operating room. You have several highly specialized independent functions going on. It's ridiculous to say that this anesthesiologist who is probably better educated and much more highly trained than the GP who is doing the surgery is the agent of the surgeon. It's not true in fact and in some states, the eastern states, it is no longer true in law.

ETHIKĒ, CADUCEUS; AESCULAPIUS

David Goldblatt
University of Louisville
School of Medicine

Prize Winning Essay
Norman A. Welch, M.D.
Medical Ethics Essay Contest
1966

Introductory Note:

This dialogue, concerning modern medical ethics, has as discussants, Caduceus, symbolizing the physician, and Aesculapius, the Greek god of medicine, representing the external milieu of forces that control morals, ethics, and their evolution.

I

Caduceus:

I see a familiar face in the distance. Hail, Aesculapius, is it you? Why I have not seen you for an age; what you doing these days?

Aesculapius:

Greetings, old friend; it is a delight to see you again after these many years. I now teach philosophy at Alexandria, and have found a good place in the field. But let me look at you; why, you are dressed most grandly. You appear a man of importance and position. Tell me of your good fortune!

Caduceus:

Oh, this dress and style that I bear reflects my own work and striving. I have gone to the University and have been diligent in my studies. Now I am a healer, a binder of wounds.

Aesculapius:

But my friend, your interests were never thus directed. You were to be a man of religion. What has happened to the part you had once wanted to play in shaping destiny?

Caduceus:

I do a great deal of good in my work. My place now is to heal the sick and wounded, to counsel the people in the ways of medicine.

Aesculapius:

But what of your hope to change the evils of the world? Perhaps you can still do this; you can influence your patients, impose your will on theirs!

Caduceus:

No! A thousand times! The minds and wills of my patients are inviolate. I try only to tell them of the truths of science. My personal ideas have no place in my practice.

Aesculapius:

But your own beliefs must influence your actions. - - - What is your course of action when science and religious views conflict? Where do you stand then?

Caduceus:

I feel that medicine is an art, neither a pure science nor a pure religion, and whatever I feel to be right I do. Of course, I am only human, and can never become completely free of myself; but this I would not desire. Complete objectivity within the physician would destroy much of his sensitivity and understanding. It would destroy true rapport. Indeed, subjective forces may often be critical in determining the course of an illness. When conflicts such as this arise, I resolve them according to my conscience.

Aesculapius:

Your conscience! But what is your conscience but your religious and ethical experience? Are you such a ninny that you would offer me this weak excuse for lack of thought?

Caduceus:

You say I lack thought; perhaps you feel that I lack insight as well. But my time is far too precious to stop thus and philosophize. I must be off, the sick await me. I cannot dally, for I am important to them, a sort of god. My time is most valuable, a premium thing. It has been pleasant to see you again.

Aesculapius:

Aha, I can see that I have struck too deeply, dear Caduceus. Fear not that you appear shallow. Trouble yourself not; you need not

think about such things. Let the others think for you. They will be most happy to do so; even now the emperor is considering laws that will shape your future. You will then have no need to think; you will become a pair of hands controlled by those who are willing to "philosophize." Their decisions will be yours. What then?!

Caduceus:

You are right, Aesculapius, I am being an ostrich. My role must not be only to heal the physical ills of the world; I have a mixed obligation. I must consider the social problems as well. But you do not know what vast numbers of dilemmas assault me when I dwell thusly. In almost every area problems lurk, and wait for me to take them on.

Aesculapius:

Of course, I sympathize with you; but I am not telling you to resolve the unsolved troubles of the world. Indeed not! If only you would discuss them, occasionally perhaps, a solution would be more easily forthcoming. And, fear not censure so. This type of adversity, whether from family, friends, or colleagues, is the most destructive form of obstructionism. You must disregard it; in so doing, you will destroy it.

Caduceus:

I do not believe that they mean harm when they say "you are a doctor, your discourse belongs in medicine." They sometimes forget that I am not a machine. But, if I should decide to enter politics, what a noise they make. The other physicians may feel that it is a breach of propriety. How then can I fulfill an obligation I may feel without risking the censure of my good compatriots?

Aesculapius:

You cannot. Indeed, this is their failing, not yours. But, when the need arises, it is still your duty to answer this call. Even though the others may feel ill toward your undertakings, your own motives must finally determine the worth of your actions. You do not hesitate to cut out the infection to save a life, though pain and suffering may transiently result; so does it behoove you to speak up under the risk of censure, to preserve higher values of freedom for your art.

Caduceus:

Aesculapius, this chat has been most thought provoking. But, while we have been talking I have grown quite thirsty. Will you join me for refreshments?

Aesculapius:

Most assuredly.

II

Caduceus:

When we were speaking, perhaps I became defensive; now let me ask you a question.

Aesculapius:

Certainly.

Caduceus:

Is it not true that my patients may owe me certain duties? Must the obligations be so one-sided? Sometimes I feel like a rag which they squeeze when they wish a drop or two, without regard for my feelings or thoughts. Indeed they may call upon me during the day and night, often for the most dreary of things. Must it always be so?

Aesculapius:

To be sure this problem is not new; neither is the answer new. The solution again lies within yourself. You must educate the people to their health needs. They must be taught to understand the nature of dire need and that which only simulates it. One does not beat a mule for rearing when he sees fire. One trains him not to fear flames. Thus, should you instruct your patients not to fear the false danger. You will be rewarded for your efforts with their confidence, and some sleep at night.

Caduceus:

You are wise, dear friend. I can see that an idea such as this may have great utility. Since I cannot expect perfection to arise of itself, I will lend a hand to support its creation.

Aesculapius:

Another method by which to avoid strife in your relationships with your patients is to achieve accord in advance of action. Discuss with them matters of your methods and fees, and surprise will not act to alienate them from you.

Caduceus:

You are so full of good thoughts today, that I would like to impose upon you further. May I ask you to lecture to me about whatever good practices that you may wish to present? I assure you that I will listen most attentively!

Aesculapius:

So it shall be.

I will lecture for you; you know that I enjoy it greatly. But, if I bore you, please stop my chatter.

The first thing that you must remember as a physician, is that you are human. You will have human failings, for all men are mortal, but in this fact lies your greatest strength. Take not these failings to heart; for while you still breathe, there is time to act anew.

Remember also, that your patients are also human, and because of this, must always be allowed to maintain dignity. Listen to them as people; do not depersonalize them. Ex-

periment not with their minds or bodies unless they willingly consent with due knowledge.

Never be an ostrich; engage openly in the public forum, be it politics, controversy, or discussion. Fight quackery and false practice, for this is not only the foe of truth, but the harbinger of death and disease through the omission of treatment.

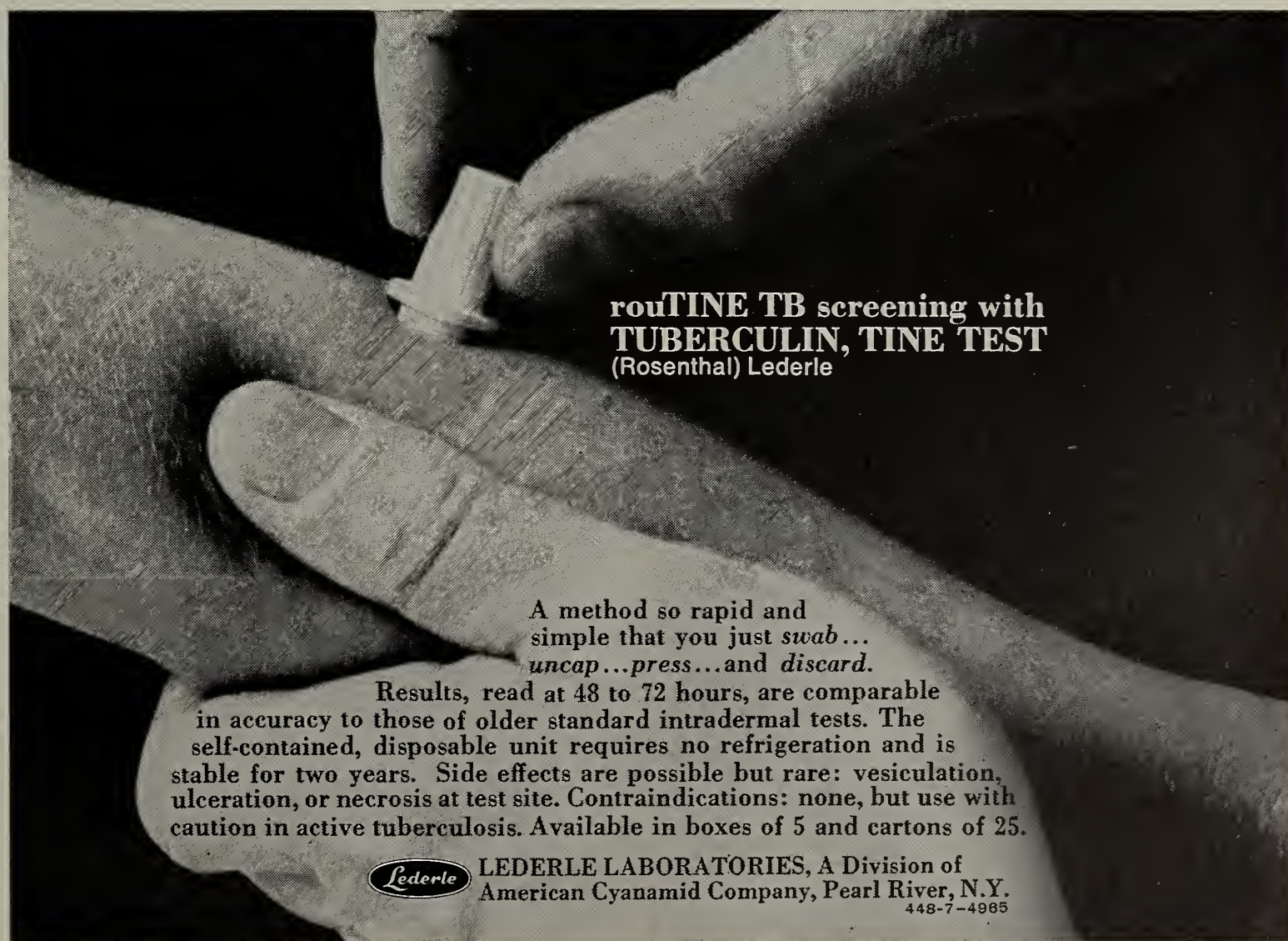
Choose your patients fairly; do not reject on prejudicial grounds. But, treat not the person with whom you feel you could not deal fairly. And, above all, respect truth, and be humble, and falsity and distrust will surely fade to be replaced by respect and confidence.

Caduceus:

Many thanks, Aesculapius. I hope that I am able to heed your words. - - - May peace go with you on your return to Alexandria.

Aesculapius:


Farewell.

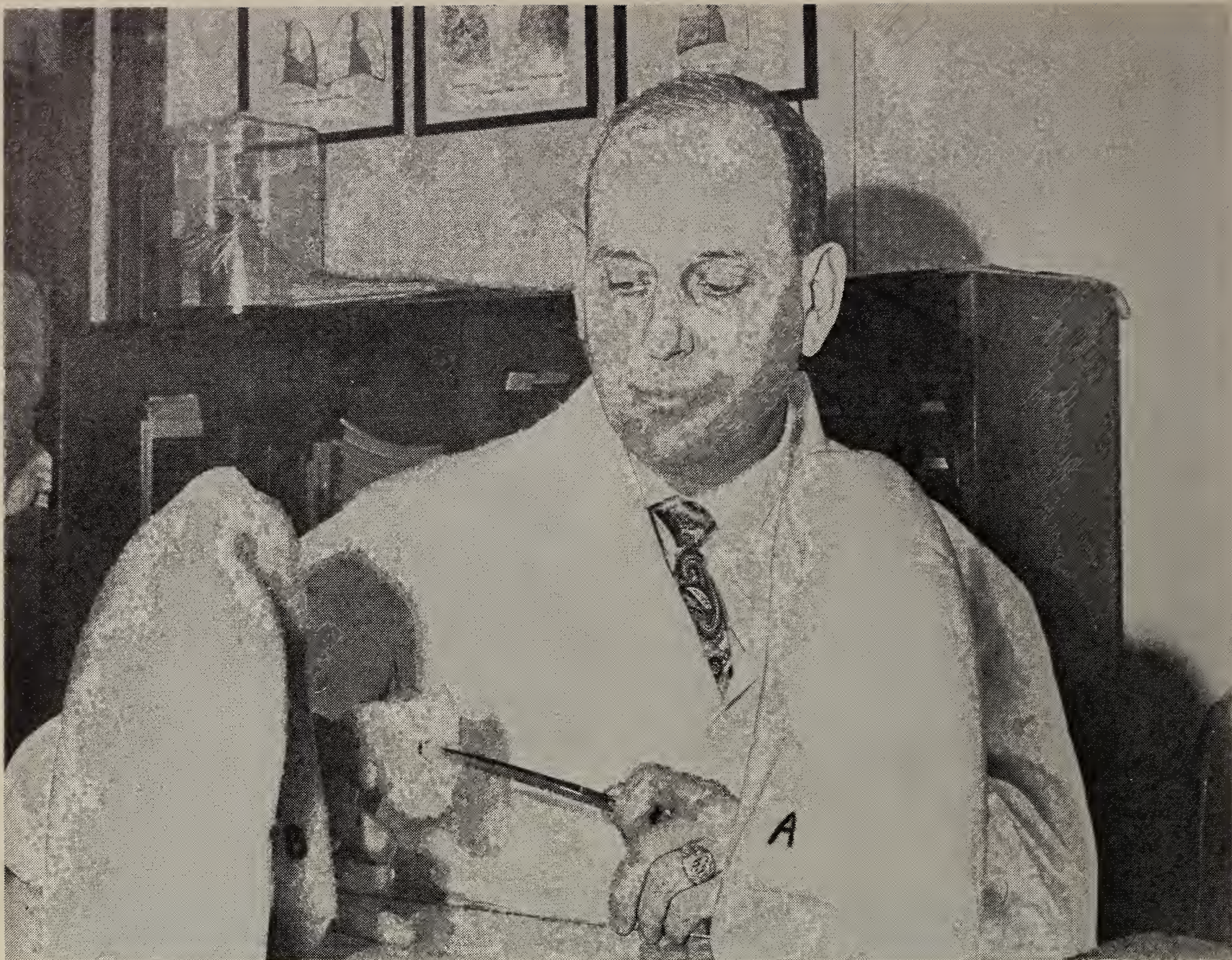


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Dr. William H. Stead, Marquette University School of Medicine, Milwaukee, Wisconsin, with two of lung models and cross-section of diseased lung which he developed in cooperation with Bostrom Corporation, Milwaukee, Wisconsin.

DEVELOPS FIRST MODELS DEPICTING LUNG DISEASE

Models of inflated human lungs to depict various stages of tuberculosis for use in teaching and in helping patients to understand the nature of their disease have been developed by a Milwaukee tuberculosis specialist. The lung models are life size and molded of polyurethane foam.

Dr. William W. Stead, Professor of Medicine, Marquette University School of Medicine, Milwaukee County General Hospital, has developed the lung models working with the chemical laboratories of the Bostrom Corporation, Milwaukee, pioneers in polyurethane foam development and manufacturers of scientific suspension seating for the transport industry.

For 18 years Dr. Stead has been concerned with teaching medical students, interns, residents, nurses and patients the nature and va-

garies of tuberculosis. Conventional methods of instruction including X-rays and autopsy examinations leave much to be desired, he said. Dr. Stead realized that few of his students had ever felt a lung in its living state and could not appreciate the changes that disease would make in its texture in order to cast various types of X-ray shadows. In pondering the problem, it occurred to him that an inflated living lung is much like a sponge, a God-made sponge in truth, and he capitalized upon the similarity of polyurethane foam to make a better teaching medium.

In May, 1965, Dr. Stead made his first crude models by carving a large piece of polyurethane foam into the shape of the lung. At about the same time he discussed his idea with Karl Bostrom, chairman of Bostrom Corp., whom he knew socially. In polyurethane Dr. Stead saw

a material with the characteristics of living lung in its softness, elasticity and the fact that molding gives it a thin covering "skin" similar to the membrane which covers the lung.

Bostrom, as a contribution to medical science, placed its research facilities at Dr. Stead's disposal. First it was necessary to prepare molds and then to devise a formulation of polyurethane which would create a foam much softer than that used by Bostrom for seat cushions. Next the foam had to be colored to simulate the normal pink color of the lung. The models are then injected by Dr. Stead with materials which, on hardening, simulate the various abnormalities seen in the lungs in tuberculosis. By this means he can depict the change made by active tuberculosis in various stages and by fibrous tissue and scars of disease which is no longer active. For example, the healed spot of primary infection is a calcified scar which feels like a pea or small bean just beneath the membrane covering the lung.

To show the details of the anatomic change made by tuberculosis Dr. Stead has used a small cutaway or cross section of the diseased portion of the lung. This section depicts the effect of the disease upon the interior of the lung. Nodules of disease, scarring, and a large cavity lesion are shown in this manner. White fibrous bands can be seen in the cavity representing the fibrous bands which are the residual of the arteries once supplying the infected area.

The model sets are accompanied by a booklet which shows reproduction of X-rays of actual patients whose disease is depicted in the models. The booklet includes descriptions of the pathology, diagrams of the X-rays and illustrative full lung sections to aid the student. The diagrams make it possible for those who are unfamiliar with reading X-rays to use the models.

Dr. Stead believes that his lung models depicting tuberculosis are only the beginning of the use of this medium in teaching students and communicating with patients. He is currently working on models to simulate diseases such as emphysema and cancer.

He also sees a new era for medical communication with patients if models of other organs can be produced to show the effects of diseases upon the liver, stomach, kidneys, etc. In the case of an ulcer patient, he noted, such a demonstration might be most helpful in achieving a clear understanding of the disease.

Dr. Stead believes that the models of the lung in tuberculosis will help stress to physicians and patients why tuberculosis is so difficult to

eradicate. The infection often passes unnoticed when first contracted, and then lies dormant for years or decades. It may undergo a late progression many years later, often in conjunction with some other disease process, without any further exposure to persons with tuberculosis.

Dr. Stead's lung models are hand made. They were displayed publicly for the first time at the meeting of the National Tuberculosis Association in Pittsburgh, Pa., May 22-25. They will be available from the Will-Eth Model Co., Box 7273, Wauwatosa, Wisc., 53213, to which Dr. Stead is the medical advisor.

Dr. Stead has been working in the field of lung diseases since 1949 and pursuing this specialty at Milwaukee County General Hospital for the last seven years. He is also Medical Director of Muirdale Tuberculosis Sanatorium in Milwaukee. He was educated at Emory University School of Medicine in Atlanta, Georgia, and received further training in Minneapolis and Cincinnati. Before going to Milwaukee he was on the faculty of the University of Florida College of Medicine.



"RELAX, I'VE COME TO UNPLUG
YOUR SINK!"

Path C A P s u l e

Submitted by the College of American Pathology in connection with the South Dakota Society of Pathologists.

RENAL FUNCTION TESTS

There are two general types of renal function tests. One group demonstrates the presence or absence of an active renal lesion while the other group measures the functional capacity of the kidneys. The first group which may give some idea of the intensity of any pathologic process present includes tests for (1) urinary protein, (2) blood pigment, (3) blood cells and (4) casts.

1. **Proteinuria** is characteristic of **all forms of kidney disease** both acute and chronic. This protein is chiefly plasma albumin, which has escaped through damaged glomerular capillaries. It can be idiopathic, as is seen infrequently in adolescents, and can be benign as seen in orthostatic albuminuria.

2. **Hematuria** can occur in all degrees of severity and can originate from anywhere in the genitourinary tract. In acute glomerulonephritis, blood passes through damaged glomerular capillaries, is partly decomposed and red cell casts are formed. Hemoglobinuria is usually due to hemoglobinemia and is not in itself a sign of kidney disease but can cause renal damage by blocking tubules and producing a lower nephron nephrosis.

3. **White cells** in any appreciable number, in properly collected specimens, represent a pathological condition in the genitourinary tract. They are always seen with red cells in Bright's disease. White cell clumps indicate a purulent inflammatory process anywhere in the genitourinary system; however, white blood cell casts are an indication of pyelonephritis.

4. **Epithelial cells** may come from any part of the tract and are hard to identify. Oval fat-containing cells frequently are indicative of tubular lesions.

5. **Casts** are molds of protein material precipitated in renal tubules. An occasional cast is found in normal urine but appreciable numbers

indicate glomerular and tubular damage. There are three general kinds, (a) hyaline, which are simple gels of protein, (b) epithelial casts made up of sloughed cells; when these cells are degenerated these casts become granular or waxy and (c) blood cell casts made up of red cells, with or without white cells, are diagnostic of glomerular bleeding. Large numbers of casts indicate an active lesion and are found in all types of renal disease in which proteinuria is present and degeneration of tubular epithelium is taking place.

The second group of tests, by measuring the functional capacity of the kidneys, indicate the degree of damage that is present. The tests however, give no information as to the presence of either an inflammatory or degenerative process within the kidney. This group includes the (1) dye excretion tests (2) concentration and dilution tests (3) measurement of BUN, creatinine, uric acid and electrolyte constituents and (4) clearance tests.

1. **A dye excretion test** that determines the speed with which injected phenolsulfonphthalein (PSP) is excreted by the kidneys is an old and popular test. PSP is excreted by both glomerular filtration and tubular excretion, and the test measures renal blood flow which usually parallels renal deterioration. The dye is best given intravenously and most information is gained from the 15 minute excretion; the normal excretion at this time is 25-50% with an average of 35%. Values may be increased in patients with liver disease and decreased in those taking uricosuric drugs.

2. **Concentration** of urine is dependent upon the quantity of solids excreted and upon the amount of water reabsorbed by the tubules. The measurement of this ability constitutes one of the simplest and best tests of renal function. A specific gravity of 1.018, or higher, in a casual urine specimen usually means the patient has good kidney function. In a concentration test where fluids are restricted (Fishberg, Mosen-thal) urine specific gravity should reach 1.020 or higher; values less than 1.018 indicate impairment of renal function and are a sign of tubular inefficiency in relation to the number of glomeruli functioning. Failure to concentrate appears early in kidney damage and may be present before there is nitrogenous retention or before the urea clearance is appreciably reduced. **Dilution** tests are of less value, since inability to dilute occurs much later than inability to concentrate, and the range between normal and abnormal is small.

3. **Serum urea nitrogen and creatinine** values should be determined whenever diminished kidney function is suspected. Urea nitrogen values of 20-25 mg % should be viewed with suspicion and creatinine values over 1.5 mg % definitely indicate impairment of urine formation and excretion. Elevated uric acid values may be found in advanced renal disease.

4. **Renal clearance tests** are the earliest and most sensitive indicators of impaired renal function and offer the best method of determining the degree of damage in acute renal disease. Their effectiveness is due to the fact that they measure both plasma levels and the amounts excreted in a given period of time.

The urea clearance test was the first test devised. Provided that the urine output is over 2 ml. per minute, the average urea clearance is 75 ml. per minute for an individual who has a surface area of 1.73 sq. m. Corrections must be made for smaller or larger persons. An average value of 75 ml. per minute has been established as "maximal urea clearance." When urine output falls below 2 ml. per minute the average urea clearance is 54 ml. per minute, and this is referred to as the "standard urea clearance." The normal range of urea clearance is 70 to 120% of either the standard or maximal clearance. Since blood is never completely cleared of urea and about 40% of that which is filtered by the glomeruli is reabsorbed in the tubules other "Clearance Tests" were devised.

Creatinine is a useful substance for such a test. Since only small amounts of creatinine are reabsorbed by tubular cells, its clearance is not affected by rate of urine flow. Hence, results are expressed only in terms of "maximum clearance rate" and not expressed as percent of normal as is done in the urea clearance test. Normal creatinine clearance ranges from 80 to 120 ml. per minute per 1.73 sq. m. of body surface area.

Serum creatinine concentration does not necessarily reflect the clearance rate since similar creatinine concentrations can be associated with vastly different clearance rates. This emphasizes the value of and the necessity for the clearance test. Creatinine clearance provides more information regarding functional status of the kidney than any other single test.

Inulin clearance is a more specific test since inulin is completely filtered by the glomeruli and not reabsorbed by the tubules. However, the test requires rather intricate chemical pro-

cedures, intravenous injections and bladder catheterization and is not generally used. The "maximum" clearance rate is 100 to 150 ml. per minute per 1.73 sq. m. of body area.

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2. Hoffman, **The Biochemistry of Clinical Medicine**, 2nd Edition, p. 251.
3. Davidsohn, Wells, **Clinical Diagnosis by Laboratory Methods**, 13th Edition, p. 448.
4. Tobias, et al., **New England J. Med.** 266:317, Feb. 15, 1962.



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SOUTH DAKOTA STATE PHARMACEUTICAL ASSOCIATION NAMES PROFESSOR 1967 RECIPIENT OF OUT- STANDING COMMUNITY SERVICE AWARD



Dr. Kenneth Redman (center), South Dakota State University professor, receives the A. H. Robins "Bowl of Hygeia" Award for outstanding community service from Harry P. Knudson, district manager in the Northern Division of A. H. Robins Company. At left is Earle T. Crissman of Ipswich, president of the South Dakota State Pharmaceutical Association.

Dr. Kenneth Redman, South Dakota State University professor, has been honored by the South Dakota State Pharmaceutical Association as its 1967 recipient of the A. H. Robins "Bowl of Hygeia" Award for outstanding community service.

Dr. Redman, who heads the College of Pharmacy's department of pharmacognosy, received the award May 7 at the association's annual convention in Aberdeen.

Making the presentation was Harry P. Knudson, district manager in the Northern Division of A. H. Robins Company. Participating in the ceremony was Earle T. Crissman of Ipswich, president of the South Dakota State Pharmaceutical Association.

The recipient is a native of Melbourne, Wash., and holds a Bachelor of Science degree in pharmacy from the University of Washington. He obtained his Ph.D. from the University of Wisconsin.

Dr. Redman is state secretary of the American Heart Association and served seven years as Brookings area chairman. He also has been active in Red Cross work, serving as chairman of several fund drives.

Dr. Redman is a member of the South Dakota State Pharmaceutical Association and a charter member of the American Society of Pharmacognosy. He also is a member of the American Pharmaceutical Association, Federation International Pharmaceutique, the Teachers of Biological Science and Teachers of Graduate In-

struction sections of the American Association of Colleges of Pharmacy, and the American Animal Health Pharmaceutical Association.

Dr. Redman has been particularly active as an advisor to pharmacy students, and a number of years ago established the Redman Scholarships awarded annually to three outstanding pharmacy students.

The Bowl of Hygeia award was established in 1958 by the A. H. Robins Company's president, E. Claiborne Robins, and now is presented annually in each of the 50 United States, the District of Columbia, Puerto Rico and all 10 provinces of Canada.

AUDIO-DIGEST ISSUES
NEW CATALOG OF
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A library of more than 300 one-hour tape recordings, devoted to comprehensive panel discussions and symposia on everyday office problems, has just been released to the medical profession by the Audio-Digest Foundation, Los Angeles.

According to the Foundation's Medical Board, the 1967 "Catalog of Classics" makes available to individual physicians, hospitals, and clinics, teaching material in seven specialty areas: Anesthesiology, Obstetrics-Gynecology, Surgery, Pediatrics, Internal Medicine, Ophthalmology, and General Practice. A number of tapes also focus on the Basic Sciences, Cancer, Psychiatry, Gastroenterology, Cardiology, Arthritis, Geriatrics, and Hematology.

The recordings represent distillates of on-the-spot recordings from several hundred major meetings of such groups as the American Medical Association, American College of Physicians, American Society of Anesthesiologists, American College of Obstetricians and Gynecologists, as well as condensations of major university postgraduate courses.

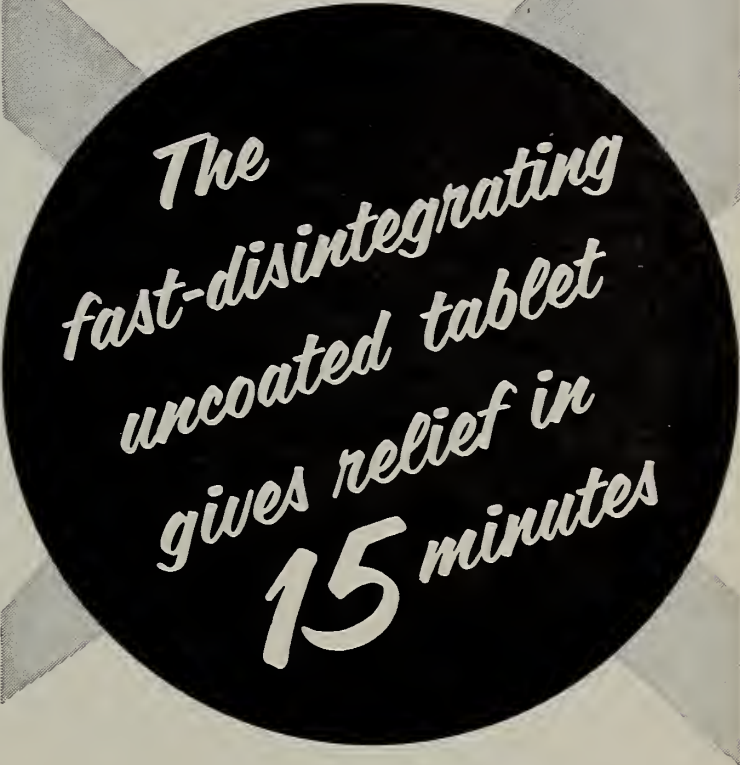
This special library of titles represented the best of programs produced in the regular subscription programs of the Audio-Digest Foundation (a nonprofit subsidiary of the California Medical Association) during the past several years.

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DRUGS

Counterfeit Prescriptions

One of the newest and least-known rackets in the U. S. today is the traffic in stolen, counterfeit, outdated and smuggled, substandard drugs. An honest pharmacist may unwittingly buy them from an apparently legitimate wholesaler. A crooked druggist may seek them out. So far, no regulatory agency has been able to determine how many of the billion or more prescriptions handled annually by U. S. pharmacists are filled with substandard items. But the racket is growing, and with it, the potential danger to unsuspecting patients.

Margaret Kreig, a freelance writer who specializes in medical matters, began investigating the illicit prescription-drug business in 1964. She convinced the Food and Drug Administration that her intentions were serious, and thus became the first outsider to take part in FDA undercover operations and to have access to many of its records. The just-published result is **Black Market Medicine**, a compendium of chilling crime data and "What can be done about it?" questions to which there are no ready answers.

Pillistics. For the racketeers, says Author Kreig, setting up a bootleg drug shop is a relatively simple matter. Machines to compress, count and package tablets can be bought second-hand from salvage companies that deal in equipment discarded by legitimate manufacturers. Small print shops will run off a few thousand imitation labels, with no questions asked. The counterfeiters hire chemists, some of whom are moonlighting while holding jobs with ethical manufacturers. They bribe technicians to steal punches and dies, and raw materials from the big companies. Much of their manufacturing is done at night in small plants that do an apparently respectable business by day.

The small band of FDA investigators have had to devise their own techniques of investigation. Some of the brand marks impressed on tablets and printed on gelatin capsules are such expert forgeries that the agency's Bureau of Drug Abuse Control (**Time**, May 5) has developed a science it calls "pillistics," an equivalent of ballistics that adapts microscopy and other laboratory tests to tracing counterfeit medicines to a particular machine.

Proof of Delivery. Mostly, the investigators rely on legwork. While Margaret Kreig was working with the FDA, she became an observer

and at times a disguised participant in lurid whodunits, and a target of death threats. In an unmarked car filled with walkie-talkie radio equipment and a spaghetti tangle of wires for tape recorders, she waited outside Macy's in Manhattan one afternoon with a chief inspector. In another car parked near by, a second inspector, posing as a black-marketeer known as "Wally from Denver," was scheduled to make an incriminating deal with a genuine crook called "Tom." Wally had been offered a counterfeit version of Upjohn's anti-diabetes drug, Orinase. His assignment: to persuade the racketeers to show him their manufacturing plant as proof that they could really deliver him 200,000 doses a week for a year or more.

With Wally and Tom in one car and the inspectors following, the trail led through Manhattan's afternoon rush-hour snarl, through the Lincoln Tunnel (no radio reception there), down the New Jersey Turnpike to Newark Airport. All evening and most of the night, the tailing went on, from scruffy diners to B-girl bars, across Hackensack Meadows on Fish House Road, around rail-truck terminals. In the long hide-and-seek, the cars got separated, and the chief feared for Wally's life. But Wally played his part well. He later emerged with a carton of counterfeit drugs, evidence for which he had paid \$4,200.

Another case led to a secret room, hollowed out of the hillside behind the garage of a \$45,000 home in a Westchester County suburb, north of New York City. The items confiscated there included half a pail of capsules marked "SKF" (for Smith, Kline & French, the makers of Dexamedrine), a small barrel of counterfeit Seconals, paper bags containing yellow tablets imprinted "Ciba," bags of waterlogged, unidentified tablets, and a 110-lb. drum marked "Made in Italy" and containing a dubious white powder. Added together these items gave the FDA an unusually persuasive collection of evidence.

Misbranding Misdemeanor. The range of phony drugs is broad — tranquilizers, sedatives, hormones, heart stimulants, diuretics, antibiotics, drugs to lower blood pressure, asthma and arthritis remedies, injectable liquids such as Vitamin B₁₂. Profits can be staggering: genuine crystalline B₁₂, for example, costs \$8,000 an ounce. The risks are relatively minor.

Margaret Kreig quotes a racketeer who was persuading a petty crook to move over to fake drugs from the numbers game, which had earned him many convictions: "There are no problems. It's not like junk [narcotics]. FDA

has a helluva time making any kinda case. And when they get you — if they get you — it's only a misdemeanor for misbranding, or some such. So you hafta pay a couple hundred dollars' fine. You can make it back in a couple of hours."

AMA ARCHIVE-LIBRARY

A young intern, hoping to practice medicine in East Africa after receiving his license, wants to correspond with medical people already practicing there and needs names and addresses. He writes to the American Medical Association Archive-Library for assistance.

A doctor, well established in a practice he has maintained for twenty years, finally gets the opportunity to take his wife on their dream tour of Europe. They will be in Switzerland in July. He wonders if there will be any medical meetings he can attend in Switzerland during their visit. He writes to the Archive-Library for information.

A general practitioner has a patient, a 17-year-old girl, who is planning to attend a year of school in Guatemala. She is a potential surgery patient. He is concerned about the type and quality of medical service available in the region. He writes to the Archive-Library for help.

You could be any one of these AMA members who benefit from the services of the AMA Archive-Library, just one dividend of your AMA membership. The Archive-Library services to members include conducting medical literature searches and compiling bibliographies free of charge. Another available aid of great value, the Library's photocopy service, is also free to you. Any article from any journal to which the Library has access can be copied and sent to you for your files.

The Library handles from 1,500 to 1,800 requests similar to those above for information and publications from physician members every month.

Questions and requests may range from the treatment of chlorine inhalation or statistics on human longevity to the latest treatment for Scleroderma or Raynaud's Disease to plans for the mass treatment of large numbers of burned patients.

The AMA Archive-Library upholds the traditional role of the medical library as an adjunct to the postgraduate education of the physician in practice, but it is even more than a library. It is a complete information center.

As a national medical society library, the Archive-Library is able to provide services not



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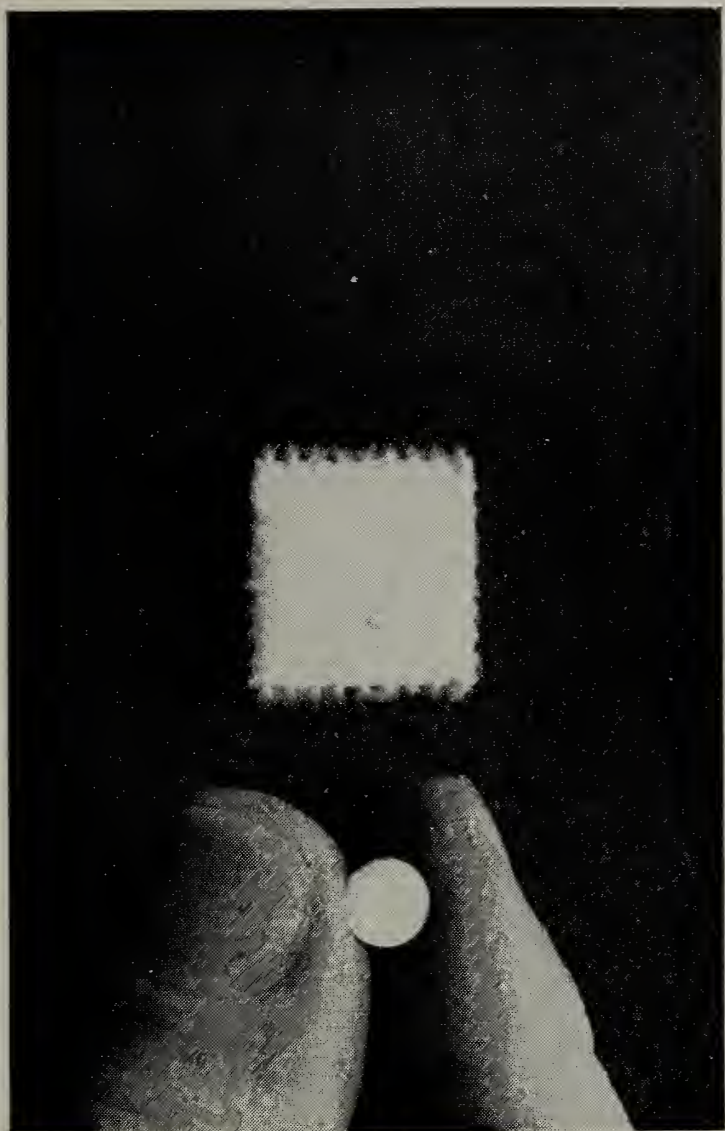
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normally available on the local level. A more complete collection of materials allows the Library to supplement local library service. In addition, several special subject collections cover thoroughly such topics as international health, history and the sociology and economics of medicine. The AMA’s collection on the sociology and economics of medicine is the best in the world. It contains almost all the English language publications and includes opinions reflected in mass media as well as in scholarly works.

At the core of the Library is a collection of current medical publications. Today, 2,200 journals are received on a regular basis. This is twice the number contained in any average medical school library. These represent all the major publications in medicine and the allied sciences. In addition to the periodicals, the Library contains 40,000 books. This makes the Archive-Library one of the most complete current medical libraries you will find any place.

Of course your needs and requests determine the Library’s content. The quantity and type of periodicals and reference books contained in the Library are guided by your requirements and those of the AMA staff.

Perhaps the one thing above all others which sets the AMA medical Library apart and makes it a true information center is the availability to the Library staff of a unique resource unavailable at many other medical libraries — the professional staff members of the AMA’s 20 scientific departments. “The professional staff is here and we can use them,” Susan Crawford, director of the Archive-Library, says. “Few other libraries have this type of consultation available. When a doctor writes to us and wants medical opinion or judgment, his question is referred to a consultant on the AMA staff, or to one of many specialists in the country, through the Questions and Answers Department of JAMA.”

Such referrals are made in numerous areas such as medical physics, cardiology, psychiatry and drug therapy. Physicians on the AMA staff evaluate information for you before it is ever delivered.

For example, a question on drugs which requires clinical and pharmacological judgment is routed to the AMA’s Department of Drugs. The staff in that department can research all available material on the subject and isolate the exact information you need.

The 26 members of the Archive-Library staff will go to great lengths to give you the information you need, and they are fully qualified to do so. They are especially trained to communicate with physicians — they speak your language. Half of the staff have graduate degrees in various areas and many have two masters degrees, one in library science and another in a chosen field such as economics, history or the biological and social sciences.

If you are a history buff, one of the more interesting areas of the Library is the Archive Section which houses documents and artifacts on the history of American medicine and the AMA. If you are at all interested in the progress of organized medicine, in the AMA or in tracing your ancestry or doing other historical research, the Archives hold a wealth of information for you.

The Library is always improving and enlarging its facilities. The last addition to the services was the International Health Section which has made it possible for all of the Library services to follow you, as a member of the AMA, wherever you go, whether it be the remote mountain stretches of West Pakistan, the rain forests of Brazil or a center of civilization such as Paris.

If you are planning an overseas trip or sabbatical, to set up practice or to attend a meeting or congress, the Library can give you all the information you need on foreign medical organizations, hospital and medical facilities in various countries, living conditions, what you should bring and the locations of the nearest American physician in any country.

The staff can also furnish you with information on a comprehensive and up-to-date listing of medical meetings outside the United States. After you are situated abroad the Library will continue to provide you with research facilities and photocopy services on specific medical subjects just as they did when you were stateside.

Any of the services of the Archive-Library are available to you by mail, telephone (312-527-1500), TWX (910-221-0300), telex (254-020) or in person. Library hours are 8:30 a.m. to 4:45 p.m. Monday through Friday.

Copies of a "Guide to Services of the Archive-Library Department," a 16-page pamphlet, will soon be available through the AMA for your further information on this AMA service.

(Note: A photo showing one view of the Archive-Library is included in this packet.)

MEDICAL MALPRACTICE—

(Continued From Page 29)

cently enacted, through its joint medical-legal committees of the Bar Association and the Medical Society, a malpractice screening plan which provides that either side may, with the consent of the other side, submit a claim to a committee composed of doctors and lawyers wherein two questions are asked and answered: (1) Are there reasonable grounds to believe that medical negligence has been committed and (2) Are there reasonable grounds to believe that the negligence, if any, is a proximate cause of the claimed injury? The benefit that a potential claimant derives through this procedure is that if the committee should find that there is negligence and causation, then the committee will provide the claimant with an expert witness in the field of medical or surgical specialty involved in the particular case thus piercing the "conspiracy of silence." This necessarily suggests to the defendant physician and the defendant physician's insurance company compelling reason why the case should be settled without litigation. In the event the committee finds that there is no reason to believe that professional negligence has been committed or that if there is negligence, there is no causation, then the attorney who represents such claimant is under an ethical duty to pursue the case no further. As of this time two cases have been considered by the joint committee in Colorado. In one case it was found that there was no professional negligence and in the other case it was held that there was negligence but that the negligence was not causally related to the damages claimed. I suggest that this plan and others similar to it have substantial merit in the conflict between the medical profession and the legal profession in the area of medical malpractice. Certainly in those cases where the attorney is not nor cannot be fully informed as to all the facts, the screening plan offers a new forum which has certain advantages to both the claimant and the physician.

As I have once before stated, it is hoped that the use and development of screening plans, more frequent inter-professional meetings and discussions will result in the mutually desired goal of the abolition of spurious suits and the honest appraisal of genuine claims, for just as the attorney has a moral and ethical obligation to follow no disingenuous course, the physician likewise owes to himself and his community the insistence on the highest quality of medical practice.

COMMENTARY



THE UNIVERSITY OF SOUTH DAKOTA SCHOOL OF MEDICINE

[illegible]

The evaluation of applicants for the School of Medicine will be a much easier task for the Admissions Committee in the future. A computer program to assist in the evaluation has been written by Mr. Richard LaRue of the USD Computer Center who worked with Dr. Gaush and the Admissions Committee. The program was adapted from one now in use at the University of Iowa College of Medicine which was developed by Dr. W. W. Morris, Associate Dean. Our program will go into effect July 1, 1967.

for each academic year in addition to computing and printing a great deal of other information about the applicant such as MCAT scores, college major, birth date, marital status, etc. The above illustration is a sample print-out using fictitious data. Several copies of each record are printed and bound in books for distribution to Committee members which allows them to study the applications at their leisure and also facilitates selection at committee meetings by eliminating large numbers of file folders containing many pages of information.

— 67 —

THE MONTH IN WASHINGTON

The Department of Health, Education and Welfare is making a broad study of prescription drugs which will be the basis of a recommendation on whether their costs should be covered by medicare when they are used outside a hospital.

HEW Secretary John W. Gardner appointed a task force of HEW officials to evaluate the study and make the recommendation.

"Prescription drugs are an essential element of modern medical care," Gardner said. "In the last twenty-five years we have witnessed greater advances in the use of drugs than in the whole previous history of medicine. Today drugs and biologicals make possible the prevention and successful treatment of illnesses that were serious and frequently fatal.

"Yet for many older Americans the cost of needed drugs prescribed by a physician is a heavy burden, representing 15 to 20 per cent of their medical care costs. Many older Americans find themselves with limited financial resources at the very time that age brings an increasing incidence of chronic disease and greater needs for medical care, including prescription drugs."

President Johnson directed last January that Gardner "undertake immediately a comprehensive study of the problems of including the cost of prescription drugs under medicare." Studies on some aspects of the question were started then and are near completion. Other specific studies are in various stages of progress.

But Congress may decide the issue before the full study is completed. The Senate Finance Committee will hold hearings this summer on such a medicare extension.

Dr. Philip R. Lee, Assistant HEW Secretary and Chairman of the task force, said that even if the study is incomplete, HEW will take a stand anyway when the Senate Finance Committee takes up the legislation.

One bill would finance medicare coverage of drugs by increasing from \$3 to \$4 the cost of monthly premiums for the voluntary doctor bills insurance program (Plan B) for persons 65 and over. Sponsored by Sen. Joseph M. Montoya (D., N.M.) the bill would provide that generic drugs rather than trade name products be used whenever possible.

Another bill is sponsored by Chairman Russell B. Long, (D., La.), the Senate's leading critic of the drug industry. It would spur generic purchasing for all federally-connected welfare programs.

"The task force will examine a number of factors which are closely involved with the use of prescription drugs and with present and proposed methods of purchasing them," Lee said. "Many of these factors concern not only drug costs — and who pays them — but also the quality of medicare care."

Among the major areas listed for task force study:

1. Present patterns of drug prescription by physicians.
2. Present patterns of prescription drug use and expense by patients.
3. Present resources used to meet drug costs (including personal resources, aid from relatives, insurance, government assistance).
4. Present drug cost coverage programs (including federal, state, commercial insurance, union, and foreign programs).
5. Distribution systems (including independent pharmacies, central pharmacies, mail-order distribution, physician dispensing, and hospital dispensing).
6. Reimbursement factors (including determination of costs; co-insurance; deductibles; and limitations on dollar costs, drug quantities, and drug types).
7. Accounting methods (including nomenclature, coding, data processing).
8. Pharmacological aspects (including generic equivalents vs. clinical equivalents).
9. Clinical aspects (including formulatory systems).
10. Legal and fiscal aspects.
11. Impact of proposed methods of purchasing prescription drugs on costs and quality of patient care, on medical profession, on pharmacy profession, on drug industry, on government.

* * * *

Surgeon General William H. Stewart says that measles (Rubella) should be eradicated this year but other cripplers and killers like venereal disease and cancer still baffle researchers.

"This year, 1967, may well go down in history as the year of measles eradication in the United States," Stewart told a House Appropriations Subcommittee, in testimony recently published.

Stewart said the measles vaccine, licensed four years ago, is "bringing the disease to the vanishing point." The Public Health Service researchers now are working with an "experimental vaccine" trying to conquer German measles, he said.

Other health problems, such as cancer, heart disease and gonorrhea, continue, however, to pose numerous research problems, Stewart reported.

Stewart told the Appropriations Subcommittee that the "fastest rising causes of death and disability" in this nation are emphysema and other chronic respiratory diseases. He said deaths from emphysema and chronic bronchitis have increased about nine times in the last 20 years, causing more than 60,000 deaths a year.

The federal health official, who estimated that some 300,000 people die each year indirectly from smoking, also reported that a new less dangerous cigarette may be developed.

"There is reason to believe that the development of a less hazardous cigarette is potentially within reach," he said. But he put no timetable on development of this type of cigarette.

* * * *

The American Medical Association supports all except one provision of legislation (S. 780) that would expand the federal government's role in the federal-state program to curb air pollution.

In a letter to the Senate Subcommittee on Air and Water Pollution, Dr. F. J. L. Blasingame, executive vice president of the AMA, pointed out that the AMA has been directing the attention of physicians and other health workers to the problems of air pollution through a series of meetings and its publications. He also noted that the AMA has supported such legislation in past years.

"In spite of past legislation and on-going federal, state and local programs which are carried on in cooperation with private industry, the American Medical Association recognizes that air pollution continues as a major environmental problem," Dr. Blasingame said. "Increased program emphasis on research and development in techniques of air pollution control and abatement is worthy of the support of the medical profession.

"The bill before you contains one provision which we cannot support. Section 107 of S. 780 would require the Secretary of HEW to establish emission standards for certain industries. On the basis of present information and understanding of the relationship between emissions and the effect it has on surrounding air, such a requirement is unrealistic and would not accomplish its intended purpose."

ALVIN P. SCHEIB, M.D.

1886—1967

Alvin P. Scheib, M.D., long-time Watertown resident and South Dakota pioneer doctor, died May 22, 1967 in a Sioux Falls hospital.

Alvin Scheib was born December 15, 1886 at Nashville, Iowa. He graduated from Hahnemann (Rush) Medical College of Chicago, Illinois, in 1908, and practiced medicine in Capa, Phoebe, Hitchcock, Elkton and Watertown. He retired from medical practice in 1948 due to ill health.

Doctor Scheib and Blanche I. Longstreth were married January 26, 1910 at Fort Pierre, South Dakota.

He was active in the American Medical Association and the South Dakota Board of Medical Examiners.

Survivors include his widow, one daughter, one son, two sisters, and three granddaughters.



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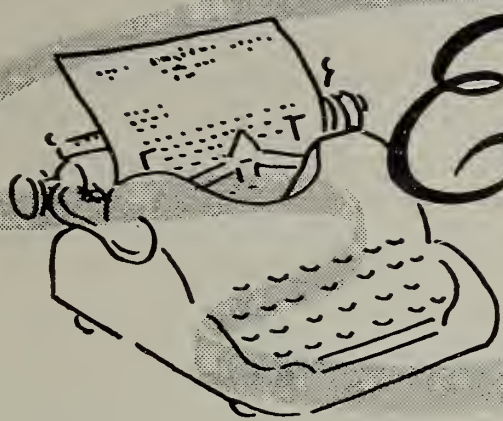


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MEDICAL EDUCATION AND RE-EDUCATION TODAY

Aircraft pilots must take annual physical examinations and maintain proficiency if they carry passengers for hire. All airlines also require their pilots to take refresher courses and to have regular performance checks. Business executives are required by their companies to attend periodic updating seminars and to take proficiency tests. Officials in government agencies receive in-service training and go to refresher courses to maintain their job rating. Paradoxically, the physician who determines the health and in many instances the entire future of his patients has no compulsion to enhance his proficiency and his knowledge unless he does it personally or belongs to an organization which requires regular study courses or attendance at meetings. This applies to specialists as well as to those in general medicine.

The pace of change in medicine today is such that material learned by the medical student while in the earlier classes of school may be outdated before he graduates. Drugs, methods

of treatment, and surgical procedures undergo frequent change. This imposes a tremendous burden upon the students and the teachers to be constantly up to date. After leaving medical school the physician is left to his own devices to keep continually abreast of recent advances. While conducting a busy practice it is most difficult to find time to remain up with the recent literature and attend meetings. Each must force himself to take regular time for re-education, if his knowledge and techniques are to be current. The program for updating is enhanced by policies of organizations such as the A.A.G.P. which require active members to attend a specified number and caliber of meetings each year, receiving a certain score for each hour of attendance, or lose membership in the society. The plan now under development in Oklahoma will give each practitioner the opportunity to return to the Medical School on a regular basis, for refresher courses.

Several of the State Boards of Medical Examiners are considering the possibility of requiring each physician licensed in the state to take a

periodic examination to determine his professional competency.

Some of the Specialty Boards have considered the possibility of requiring the physician who has been Board Certified to take re-examinations at periodic intervals, to maintain the Certification. Too often one hears the term "Board Eligible" applied loosely to a physician who has undergone post internship training in a special field of medicine, the training often having been completed many years previously. It is not generally known, but the various Specialty Boards recognize the term "Board Eligible" in one context only. It designates a physician meeting certain requirements as to training, character, and experience, who has applied to the appropriate Specialty Board and received permission to take its examination, within a specified interval. If the applicant does not take the examination within the designated time, he loses the "Board Eligibility" and must reapply and again be given permission to take the examination. Upon satisfactory completion of the examination he is declared certified by the Board. The physician who undergoes specialty training, but does not apply for and receive permission to take the board examination has no board eligibility.

It has been stated by a representative of the American Board of Psychiatry and Neurology, "One of the difficulties with the term 'Board Eligible' is that some individuals declare themselves eligible. They have reviewed their training and compared it to our requirements and decided that they could meet all of the requirements and, therefore, stoutly maintain they are 'board eligible'. They are not eligible for examination until they have been so declared by this board." Similar statements in regard to "Board Eligible" have been made by other American Boards.

There have been articles in national medical periodicals recently relating to periodic evaluation by the credentials committee of the individual hospital staff members for professional competence. Senility, intemperance, mental incompetence, abuse of drugs, unorthodox methods of treatment and many other factors which might affect the handling of patients have been suggested for investigation by this committee, followed by recommendations to the executive committee for remedy. In the January, 1967, issue of Medical Opinion and Review, Dr. Walter A. O'Donnel discussed the pos-

sibility of periodic inspection of each physician's office by a committee, to determine the adequacy of equipment and the appropriateness or effectiveness of treatment. This committee might be similar to that which evaluates hospitals under the inspection team of Joint Commission. All of these suggestions for evaluation of physicians and their care of patients are being advanced under the impetus of **improvement in the quality of medical care.**

Despite the fact that these suggestions may be distasteful to physicians, they cannot be thrust aside without due thought and deliberation. With the advent of Medicare and other programs for health care under the auspices of the Federal Government, there will be increasing emphasis upon the quality of medical treatment. The physicians individually and collectively will have to maintain a standard of excellence in patient care spontaneously or be forced to do this by government intervention.

J. B. GREGG, M.D.

YOUR ASSOCIATION AND ITS TAX STATUS

Recently the South Dakota Supreme Court rendered a decision vitally affecting the tax status of the South Dakota State Medical Association. In essence the decision obligates the South Dakota State Medical Association to pay property taxes on the Executive Office in Sioux Falls thus requiring the Association to pay back taxes since 1960.

Recent articles dealing with the status of tax exempt organizations such as ours have indicated that most have been able to retain their tax exempt status on property. It is evident in South Dakota that many similar organizations will continue to enjoy a tax relief while the State Medical Association will pay property taxes.

The question that arises, of course, is, should a non-profit organization's property be taxed? And, if so, should not the tax apply to all organizations of similar nature?

Just recently the Internal Revenue Service has proposed to tax publication advertising revenues of tax exempt organizations. This can and will seriously affect the financial picture of not only the **South Dakota Medical Journal** but other publications such as the **National Geographic**, the **AMA Journal**, state medical journals and publications of organizations such

as the Boy Scouts and Girl Scouts. The recommended 48% tax would be levied on net advertising revenues and in our particular case will raise a question as to the feasibility of continuing to publish a monthly medical journal.

It is apparent that governmental bodies are eyeing an additional source of revenue from some organizations especially in the professional area. This will have a definite impact upon the services that an association can provide not only to its membership but to the public as well.

MOTORCYCLES — A HEALTH HAZARD

The National Safety Council estimates that there will be nearly five million cycles registered in the United States by 1970. Deaths, due to motorcycles, showed a national increase of 41% from 1964 to 1965. A motorcycle accident is 3 times as likely to be fatal as an automobile accident. The number of seriously injured run into thousands each year.

A personal review of the eight deaths due to cycles in South Dakota in 1966, (furnished by the courtesy of Mr. Don Rounds, Safety Director for the Department of Highways) and a personal experience with a series of seriously injured cycle drivers and passengers has deeply impressed the writer of the magnitude of this growing problem.

The South Dakota legislature passed an act on March 6, 1967 providing new safety regulations for motorcycle operators. The law required licensing of the operator, the use of helmets and certain other features that are much needed. This act still falls short of the more strict Michigan law which requires e.g.: that renting agencies instruct the renter in operating the cycle,

require the agency to refuse rental to anyone the agency believes incompetent to operate a cycle, to keep cycles in safe condition and carry liability insurance on the renter who does not have his own. The South Dakota law fails to require periodic inspection of the motorcycles as recommended by the National Safety Council, who also recommend a special motorcycle drivers license and closer regulation of motorcycle rental agencies.

Our legislators are to be commended for their progress in the right direction. Encouragement should be given to them for improvement of the law by amendments to the act for furtherance of the safety of the cyclist. Until such time as this has been accomplished all cyclists should be encouraged to wear shatter-proof goggles or face shield, to wear heavy clothing and to protectively cover the hands and the feet with leather gloves and boots.

Robert E. Van Demark, M.D.

Mrs. W. E. Jones of Sturgis died unexpectedly on May 17th in Minneapolis, Minnesota.

Zinita Katherine Taylor was born March 30, 1924 at Garner, Iowa. She was educated at Waterloo, Iowa, and was graduated from the School of Nursing at the University of Iowa. She married William E. Jones, M.D. on November 22, 1946, and they have since made their home in Sturgis.

We wish to extend our sincere sympathy to Doctor Jones and his three daughters, Virginia, Judy and Margaret.

University of S. Dak.

Letters to the Editor

May 17, 1967

South Dakota Medical Association
Richard C. Erickson, Executive Secretary
711 North Lake Avenue
Sioux Falls, South Dakota

Dear Mr. Erickson:

Upon the completion of the Science Fair we wish to send you a report. Your contribution of \$66.67 was used this year for travel expenses of our two grand award winners to the International Science Fair in San Francisco this past week. They were Curtis Bryant of Le Mars Community School, Le Mars, Iowa and Mary Stewart of Central High School, South Sioux City, Nebraska. Bryant received several major awards again this year at the ISF helping this region to maintain the good record it has established in national competition.

Since we must rely on contributors outside the University for the cash awards to schools and travel costs to the International Science Fair we want to express our appreciation to you for your fine help again this year.

Sincerely yours,
G. I. Moller
Professor of Physics
University of S. Dak.

I would like to thank you for your help in sponsoring my trip to the International Science Fair in San Francisco through the University of South Dakota Regional Science Fair. I feel fortunate to have represented the region and appreciate your support.

Sincerely,
Mary Stewart

RESIDENCY IN INTERNAL MEDICINE The Charles T. Miller Hospital St. Paul, Minnesota

Applications are now being accepted for Medical Residencies at the first, second, and third year levels, to begin during the second half of 1967. Active program includes experience in

sub-specialties, and participation in a 50,000 visit out-patient clinic, as well as supervised treatment of in-patients. Teaching staff members are all board certified, and the majority hold faculty appointments at the University of Minnesota Medical School. Hospital also conducts residencies in General Surgery, Obstetrics-Gynecology, Radiology, Pathology, Ophthalmology and Urology, and is approved for twelve rotating internships with applications accepted only through the National Intern Matching Program. For descriptive brochure and application blanks, address inquiry to:

Chairman of Education and Research
The Charles T. Miller Hospital
125 West College Avenue
St. Paul, Minnesota 55102

ANNUAL OTOLARYNGOLOGIC ASSEMBLY

October 14 through 20, 1967

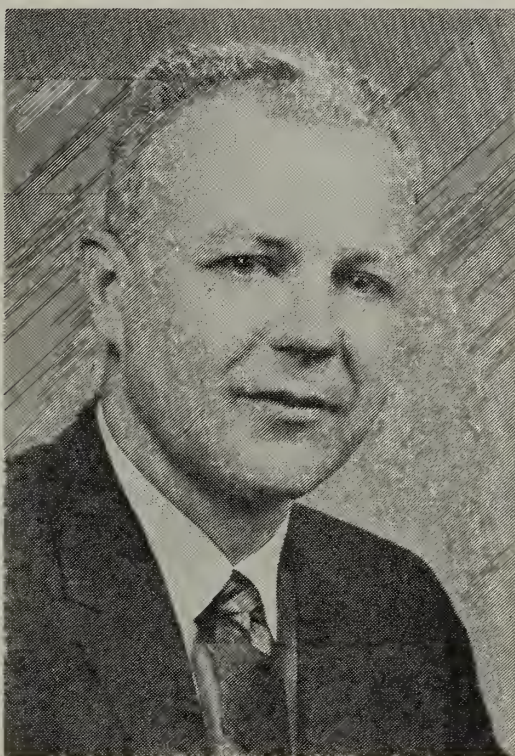
THE ANNUAL OTOLARYNGOLOGIC ASSEMBLY OF 1967 will be held October 14 through 20, 1967, in the new Illinois Eye and Ear Infirmary at the Medical Center, Chicago. The Department of Otolaryngology of the College of Medicine of the University of Illinois offers a condensed postgraduate basic and clinical program for practicing otolaryngologists under the direction of Doctor Emanuel M. Skolnik. It is designed to bring to specialists current information in medical and surgical otorhinolaryngology.

A separate, but correlated course entitled "HEAD AND NECK RADIOLOGY CONFERENCE" will be conducted by the Department of Radiology for two full days just preceding the ASSEMBLY, Thursday and Friday, October 12 and 13, 1967.

Interested physicians should direct communications to the mailing address:

Department of Otolaryngology
P. O. Box 6998
Chicago, Illinois 60680

P R E S I D E N T ' S P A G E



Greetings:

To be elected President of the State Medical Association is a great honor. I am most appreciative of this honor and acutely aware of the related responsibilities.

Our annual meeting is an interesting blend of activities. There is the opportunity for ALL of us to play an active part in the formation of Association policy through the Reference Committees of the House of Delegates. The scientific lectures and workshops provide us with an opportunity to learn of new advances in medicine. And perhaps more important and most enjoyable is the opportunity to renew acquaintances and exchange ideas with physicians from throughout the state.

More of us should avail ourselves of these opportunities presented annually at our state meeting.

JOHN J. STRANSKY, M.D.
President



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1944: June 6—D Day.



1945: The war ends. Bond sales continue.



1948: Berlin Airlift.



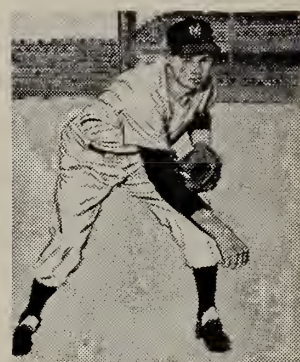
1950: President Truman orders military aid to Korea.



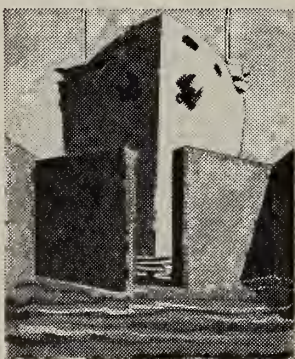
1951: Kefauver hearings. E Bonds get 10-year extension.



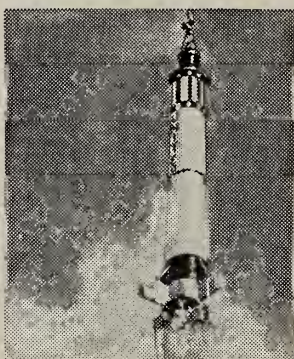
1953: Dr. Salk develops polio vaccine.



1956: Don Larsen hurls first perfect Series game.



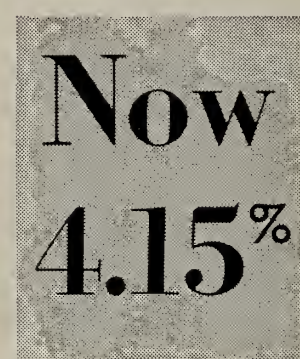
1959: St. Lawrence Seaway opens. \$17 billion in E Bonds over 10 years old.



1961: Alan Shepard is first U. S. Astronaut in space.



1963: John F. Kennedy assassinated; Lyndon Johnson sworn in.



1966: Savings Bonds' 25th Anniversary. New 4.15% interest rate announced.

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Pop's Proverb

The greatest sin of all is ingratitude.

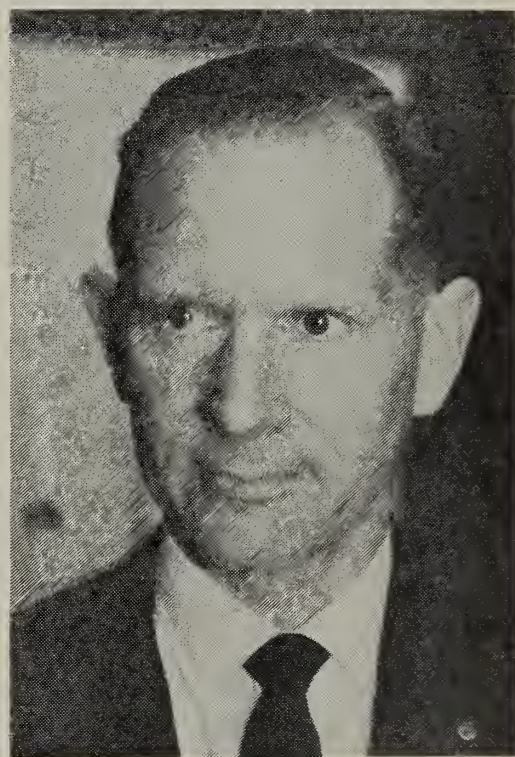
The South Dakota Heart Association recently met to elect officers for the coming fiscal year. The new president is W. E. Dorsey of Redfield. President-elect is **Gerald E. Tracy, M.D.**, Watertown; with **William B. Janss, M.D.**, Rapid City; **Bruce C. Lushbough, M.D.**, Brookings; Gordon Curren, Huron and Kenneth Redman, Brookings as vice presidents. Mrs. Emma Shunk, Watertown was elected treasurer, and August Hagen, Aberdeen, secretary. **T. J. Wrage, Jr., M.D.** is past president.

Newly elected members of the board of directors are **R. A. Buchanan, M.D.**, Huron; Mrs. C. A. Eikamp, R.N., Watertown; Gilbert McTighe, Mitchell; **D. Max Reade, M.D.**, Yankton; **H. Streeter Shining, M.D.**, Rapid City; **Harold E. Lowe, M.D.**, Mobridge; **M. E. Sanders, M.D.**, Redfield, and **G. E. Tracy, M.D.**, Watertown.

R. H. Hayes, M.D., formerly of Winner, addressed members of the Methodist Church of Mission, South Dakota, recently. He discussed his recent year of service in Viet Nam.

* * *

James Monfore, M.D., has been elected to active membership in the American Academy of General Practice.



Karl Frederick Leupold, Jr., of Cincinnati, Ohio, has been appointed a Division Sales Manager for Geigy Pharmaceuticals, a division of Geigy Chemical Corporation.

Mr. Leupold will be responsible for Geigy pharmaceutical sales activities in South Dakota, North Dakota and Minnesota.

A graduate of Ohio State University, he received his Bachelor of Science degree in 1949.

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IS NEEDED**

Mario Herrera, M.D., Aberdeen cardiac specialist, discussed heart attacks and causative factors at the May meeting of the Cosmopolitan Club in Aberdeen.

* * *

G. Robert Bartron, M.D., Watertown, recently addressed South Dakota psychologists at their annual meeting in Brookings. He told them that "Mental health and its care is one of the most pressing needs in our nation today."

Doctor Bartron suggested the public relations aspect of the psychologists' organization be improved and expanded to put before the people the benefits of their professional services.

* * *

Paul V. McCarthy, M.D., Aberdeen, was recently honored for his 37 years of service to the patients of St. Luke's Hospital and to the medical needs of Aberdeen, South Dakota, and surrounding vicinity. The Governing Board of St. Luke's Hospital appointed him to the position at St. Luke's Hospital of **Radiologist Emeritus**.

* * *

His trip to a mission in Mexico was recounted by **Noel de Dianous, M.D.** at a recent meeting of the Cosmopolitan Club in Aberdeen, South Dakota.

Home study courses in Ophthalmology and Otolaryngology are being offered as part of the Educational Program of the American Academy of Ophthalmology and Otolaryngology. The courses are planned for use in conjunction with residency training as a supplement to basic science courses offered in teaching institutions; composed of a number of subjects, including the basic sciences, appertaining to the sensory organs; available to graduate physicians after the completion of one year's internship; suggested as a guide for systematic review by physicians in clinical practice. Applications for the 1967-1968 Courses must be filed before August 15, 1967. The registration fee is \$20.00. For information and application forms write to: Home Study Courses, American Academy of Ophthalmology and Otolaryngology, 15 Second Street, S.W., Rochester, Minn. 55901.

* * *

The newly elected officers of the Whetstone Valley Medical Society (District 12) are:

V. Janavs, M.D., Milbank,
President

Ruth Czajkowskyj, M.D.,
Veblen,
Secretary-Treasurer

James D. Collins, M.D. has established a medical practice in Hoven. He has replaced John O'Sullivan, M.D., who recently moved to Redfield.

Doctor Collins is a native of Trail City, South Dakota, and spent his high school years at Gettysburg. He completed his undergraduate work and first two years of medical school at the University of South Dakota, and is a graduate of the Medical College of Virginia at Richmond, Virginia. He just recently completed an internship at Sioux Valley Hospital in Sioux Falls.

Doctor and Mrs. Collins have one daughter, who is three years old.

* * *

The Huron Clinic has been elected to membership in the American Association of Medical Clinics, according to Mr. Lowell Schmidt, business manager.

Membership in the association is by invitation to those clinics which meet the standards of the group. There are 171 clinics, in the group, of which the only other South Dakota members are the Rapid City Medical Center and the Bartron Clinic of Watertown.

* * *

Jerry L. Walton, M.D., Martin, has been elected to active membership in the American Academy of General Practice.

AUG 1967

SOUTH DAKOTA

PUBLISHED MONTHLY

JOURNAL

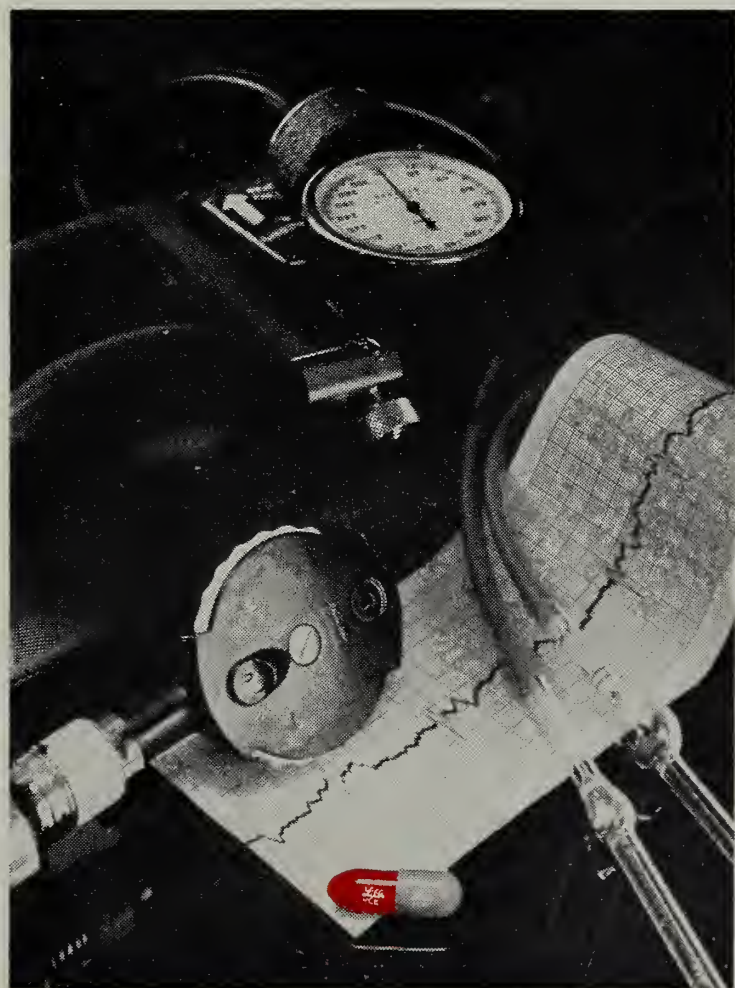
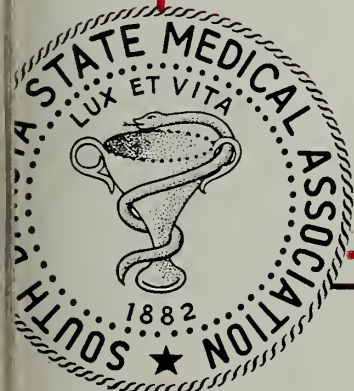
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has an atropine-like action which should be considered when prescribing diphenhydramine hydrochloride. **ADVERSE REACTIONS:** Side effects are generally mild and may affect the nervous, gastrointestinal, and cardiovascular systems. Drowsiness, dizziness, dryness of the mouth, nausea, nervousness, palpitation, blurring of vision, vertigo, headache, muscular aching, thickening of bronchial secretions, restlessness, and insomnia have been reported. Allergic reactions may occur.

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THE SOUTH DAKOTA
JOURNAL OF MEDICINE

JOURNAL OF THE SOUTH DAKOTA STATE MEDICAL ASSOCIATION
AND THE SIOUX VALLEY MEDICAL ASSOCIATION

Volume XX

August, 1967

Number 8

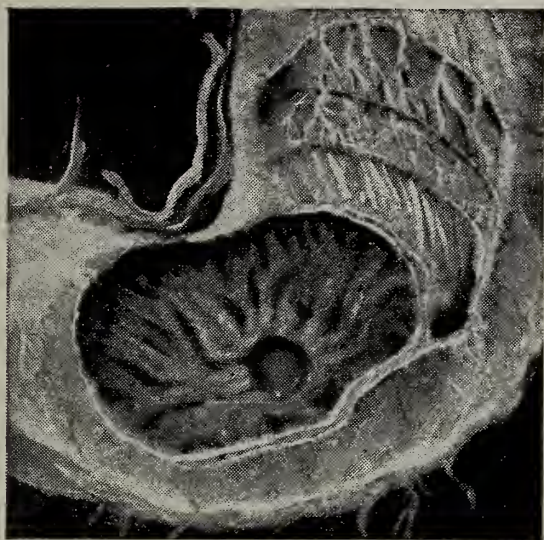
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JOURNAL OF MEDICINE

JOURNAL OF THE SOUTH DAKOTA STATE MEDICAL ASSOCIATION
AND THE SIOUX VALLEY MEDICAL ASSOCIATION

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Volume XX

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Transactions of the

South Dakota State Medical Association

Eighty-sixth Annual Session

June 3, 4, 5, 6, 1967

1967-1968 OFFICERS

President	
John J. Stransky, M.D.	Watertown
President-Elect	
John T. Elston, M.D.	Rapid City
Vice-President	
R. H. Quinn, M.D.	Sioux Falls
Secretary-Treasurer	
(1970)	
A. P. Reding, M.D.	Marion
AMA Delegate	
(1968)	
A. P. Reding, M.D.	Marion
Alternate AMA Delegate	
(1968)	
R. H. Quinn, M.D.	Sioux Falls
Chairman of the Council	
E. T. Lietzke, M.D.	Beresford
Speaker of the House	
R. H. Hayes, M.D.	Vermillion
Councilor at Large	
P. P. Brogdon, M.D.	Mitchell
COUNCILORS	
First District (Aberdeen)	
E. J. Perry, M.D. (1968)	Redfield
Second District (Watertown)	
G. Robert Bartron, M.D. (1968)	Watertown
Third District (Brookings-Madison)	
J. A. Muggly, M.D. (1969)	Madison
Fourth District (Pierre)	
A. J. Tieszen, M.D. (1968)	Pierre
Fifth District (Huron)	
Fred Leigh, M.D. (1969)	Huron
Sixth District (Mitchell)	
Harvard Lewis, M.D. (1969)	Mitchell
Seventh District (Sioux Falls)	
E. T. Lietzke, M.D. (1969)	Beresford
Eighth District (Yankton)	
Clark Johnson, M.D. (1968)	Yankton

Ninth District (Black Hills)	
C. E. Tesar, M.D. (1970)	Rapid City
Tenth District (Rosebud)	
M. R. Cosand, M.D. (1970)	Winner
Eleventh District (Northwest)	
H. E. Lowe, M.D. (1970)	Mobridge
Twelfth District (Whetstone)	
H. H. Brauer, M.D. (1970)	Sisseton

BUDGET AND AUDIT COMMITTEE

June 3, 1967

Sheraton Johnson Hotel, Rapid City, S. D.

The Budget and Audit Committee met at 9:00 A.M. on Saturday, June 3, at the Sheraton Johnson Hotel. Present were Drs. A. P. Reding and D. L. Scheller. Also present were Mr. Richard C. Erickson and Mr. Robert Green.

The CPA Audit of the Association books was examined by the Committee. Dr. Reding moved that the CPA Audit be accepted. The motion was seconded by Dr. Scheller and carried.

Mr. Erickson explained the allocation of expenses to the different funds operated by the executive office.

The meeting adjourned at 9:30 A.M.

FIRST COUNCIL MEETING

June 3, 1967

Rapid City, South Dakota

The meeting was called to order at 10:00 a.m. by Dr. E. T. Lietzke, Chairman of the Council. Roll call was taken by Richard C. Erickson, Executive Secretary. The following Councilors were present: Doctors Preston Brogdon, J. J. Stransky, J. T. Elston, A. P. Reding, E. T. Lietzke, Paul Hohm, J. A. Muggly, E. J. Perry, G. Robert Bartron, A. J. Tieszen, Fred Leigh, Harvard Lewis, Clark Johnson, C. E. Tesar, H. E. Lowe, E. A. Johnson. Commission Chairmen present were Doctors D. L. Scheller, John B. Gregg, George Knabe, and R. H. Quinn.

Dr. Lowe moved that we dispense with the reading of the minutes of the previous meeting. The motion was seconded by Dr. Reding and carried.

REPORT FROM THE COMMISSION ON MEDICAL SERVICE TO THE COUNCIL FOR ITS MEETING

ON
JUNE 3, 1967

1. There have been no formal meetings of the Commission since the last report to the Council.
2. The matter of a state-wide standard insurance form has been investigated and replies have been received from seven members of the Commission. It was the general consensus of those that responded that it would be unwise to make any drastic change in the insurance form used by the physicians of

the State until a form which is acceptable by all insurance companies, Medicare, and other programs which utilize a report form, can be devised.

3. The South Dakota State Nurses Association has requested permission to poll the members of the SDSMA in regard to their opinions relating to the need for nurses in this State. A three page questionnaire was made up by the Nurses Association. It is my opinion that the questionnaire proposed is rather redundant and probably would not be well answered by the busy physicians. If a concise one page questionnaire, accompanied by a stamped self-addressed envelope, can be sent out it would probably help find answers relating to this problem. It is suggested that the Council look with favor upon this matter.

This final report is respectfully submitted,

J. B. Gregg, M.D., Chairman
Commission on Medical Service

Dr. J. B. Gregg, Chairman of the Commission on Medical Service, gave a brief report on the Commission's activities. A brief discussion was held on the new insurance form prepared by the Health Insurance Council. Dr. Leigh moved that the Association continue to use the current form. The motion was seconded by Dr. Perry and carried.

Dr. Brogdon discussed a survey proposed by the Nurses' Association, to be sent to physicians in South Dakota. Dr. Perry moved that the State Medical Association approve a short form survey. The motion was seconded by Dr. Brogdon and carried.

COMMISSION ON SCIENTIFIC MEDICINE

Dr. George Knabe, Chairman of the Commission on Scientific Medicine, gave a brief report. A discussion was held on the Comprehensive Health Planning Program.

Dr. Leigh moved to accept the report of the Commission on Scientific Medicine. The motion was seconded by Dr. Lowe and carried.

COMMISSION ON INTERNAL AFFAIRS

Dr. Scheller held a brief discussion on the budget and audit report. Dr. Hohm moved that the Council accept the report of the Commission on Internal Affairs. The motion was seconded by Dr. Reding and carried.

Dr. Reding moved that the Council commend the Executive Secretary for his astute economic judgment. The motion was seconded by Dr. Hohm and carried.

COMMISSION ON LEGISLATION AND GOVERNMENTAL RELATIONS

Dr. Quinn reported that the Commission on Legislation and Governmental Relations had no new business to report. Dr. Leigh moved that the Council accept the report of the Commission on Legislation and Governmental Relations. The motion was seconded by Dr. Perry and carried.

COMMISSION ON COMMUNICATIONS

Mr. Erickson briefly discussed the booth to be sponsored at the State Fair. Dr. Reding moved that the Council accept the report of the Commission on Communications. The motion was seconded by Dr. Brogdon and carried.

COMMISSION ON LIAISON WITH ALLIED ORGANIZATIONS

No report.

Dr. Quinn thanked the Council for allowing Commission Chairmen to sit in on the Council meetings and recommended that this practice be continued.

OLD BUSINESS

Mr. Erickson discussed the tax status of the Association building and reported that the Association must pay property taxes.

Mr. Erickson gave a brief report on Title 19 and stated that a proposal had been submitted to the Department of Welfare by Blue Shield.

A discussion was held on the future utilization of the Association building. Dr. Paul Hohm moved that if Blue Shield is accepted as carrier for Title 19 and if Blue Shield will loan the money to the Association, the Association should build the necessary addition. The motion was seconded by Dr. Leigh and carried.

NEW BUSINESS

A brief discussion was held on a resolution from the Nurses' Association, concerning minimum salaries for nurses.

SOUTH DAKOTA NURSES' ASSOCIATION, INC.

2116 South Minnesota Avenue
Sioux Falls, South Dakota 57105

May 8, 1967

TO:

EMPLOYERS OF NURSES

Hospital Administrators — Executive Director, SDHA
Nursing Service Directors
Nursing Home Administrators — Executive Director, SDNHA
Executive Director, South Dakota State Medical Association
President, South Dakota State Medical Association
President, South Dakota Dental Association
President, South Dakota Osteopath Association
South Dakota Board of Regents
South Dakota Board of Charities & Corrections

FROM:

Mrs. Bernetha A. Damm, Executive Director, South Dakota Nurses' Association, 2116 South Minnesota Avenue, Sioux Falls, South Dakota 57105

RE:

SALARY GOAL FOR NURSES

In June 1966, the House of Delegates of the American Nurses' Association adopted the following resolution:

"WHEREAS, This nation is committed to the idea that quality health services are a right of all the American people; and

"WHEREAS, This commitment exacerbates a critical inability to provide adequate amounts of quality nursing service, an essential component of health care; and

"WHEREAS, Nurses' salaries in such a committed nation should reflect the value of their service to society, their investment in education, and their worth in relation to other professions and occupations; and

"WHEREAS, The low economic status of nurses is a deterring factor in recruitment of young people into the profession and discourages qualified nurses from remaining in nursing practice; and

"WHEREAS, It is imperative for the health of the nation that the nursing profession in both quantity and quality meet the expansion of demand and new knowledge; therefore be it

"RESOLVED, That the American Nurses' Association adopt a competitive salary goal: In 1966, a registered nurse should enter the profession at a yearly salary of not less than \$6,500.00; and be it further

"RESOLVED, That State Nurses Association inform their membership, the employers of nurses, and the public of this national salary goal and, using all methods consistent with the ANA Economic Security Program, work toward its implementation."

Following the adoption of the aforementioned resolution, the members of the South Dakota Nurses' Association voted at the convention held in Mitchell, South Dakota in October 1966 to support the goal, and work toward implementing it as rapidly as possible.

It was the decision of the voting body that as a beginning step toward meeting the national salary goal that the base salary for the beginning practitioner of nursing in South Dakota should not be less than \$450.00 plus fringe benefits and that proportionately higher salaries be paid for experience, education and responsibilities of the position.

The Board of Directors of the South Dakota Nurses' Association has asked that all employers of nurses be informed of the action taken by the members of our state.

Salaries for nurses entering the profession in South Dakota are well below the national salary goal. South

Dakota has served as a "feeder state" for quite some time. Nurses in South Dakota are concerned that we will continue to be a "feeder state" much more rapidly if salaries are not escalated to meet the competition with other states in this movement.

Nurses are also cognizant of the fact that several employers have already begun to make adjustments, and some have already reached the initial step of \$450.00. Target dates will be set by nurses for attaining the national salary goal. We are hopeful the adjustments can be made within a reasonable time and in an orderly manner so that citizens of our state will be assured of the best nursing care.

We will appreciate your consideration and assistance in making this information available to persons within your respective organizations or agency so plans may be made for appropriate adjustment in budgets wherever it is deemed necessary within a reasonable time to meet the initial step.

Thank you very kindly.

Sincerely yours,
Mrs. Bernetha A. Damm
Executive Director

Dr. Brogdon moved that we accept the resolution as an item of information. The motion was seconded by Dr. Leigh and carried.

Appointment of members to the Board of Directors of the Medical School Endowment Association was discussed. Dr. Reding moved that the following members be reappointed: Doctors T. H. Willcockson, G. E. Tracy, F. R. Williams, Warren Jones, J. A. Anderson, R. C. Jahraus, and E. T. Lietzke. The motion was seconded by Dr. Lowe and carried.

A discussion was held on the annual donation to SoDaPaC. Dr. Leigh moved that the Association donate \$500.00 to SoDaPaC. The motion was seconded by Dr. Brogdon and carried.

Dr. Tesar discussed a recommendation from the Motor Vehicle Administration concerning labeling prescription drugs "Do not drive while taking this medication." Dr. Stransky moved to refer this item to the Commission on Medical Service. The motion was seconded by Dr. Reding and carried.

Mr. Erickson discussed the Association policy for allowing collect calls at the Executive Office. Dr. Leigh moved that collect calls except for those from officers of the Association not be accepted. The motion was seconded by Dr. Elston and passed.

Dr. Brogdon discussed a request by Dakota Wesleyan for endorsement of a course in sex education. A resolution was presented for endorsement of sex education within the proper realm. It was noted that physicians at the local level be encouraged to help plan and teach such courses. Dr. Brogdon moved to accept this resolution and make it available to other educational institutions. The motion was seconded by Dr. Reding and carried.

Mr. Erickson discussed possible taxation on the Journal's income. He stated that an increase in the Journal's rent and two wage increases were made effective May 1, 1967. Dr. Hohm moved that Mr. Erickson continue handling the Journal's affairs as he has in the past. The motion was seconded by Dr. Leigh and carried.

Mr. Erickson discussed the centennial edition of the Journal Lancet and requested that each district submit biographical material on one or two outstanding physicians of that district and also a history of the district.

Mr. Erickson presented the following named physicians and lay persons for appointment to the SoDaPaC Board of Directors: W. R. Taylor, M.D., T. J. Wrage, Jr., M.D., H. R. Wold, M.D., Barbara Spears, M.D., B. T. Lenz, M.D., P. P. Brogdon, M.D., B. G. Church, M.D., D. Max Reade, M.D., A. A. Lampert M.D., M. R. Cosand, M.D., C. A. Johnson, M.D., Mrs. C. W. Anderson, Mrs. J. I. Hovland, and F. Otto Schnaidt, D.D.S. Dr. Leigh moved that the nominees be accepted. The motion was seconded by Dr. Johnson and carried.

Dr. Stransky introduced resolution #4.

SOUTH DAKOTA STATE MEDICAL ASSOCIATION HOUSE OF DELEGATES

Resolution #4

Introduced by: The Council

Subject: Blue Shield

WHEREAS, South Dakota Blue Shield has operated as carrier and/or fiscal intermediary over the past five years for various State and Federal governmental health care programs, and

WHEREAS, South Dakota Blue Shield has demonstrated its ability to process claims in an orderly and efficient manner,

NOW, THEREFORE BE IT RESOLVED, that the South Dakota State Medical Association urges the State Welfare Commission to designate South Dakota Blue Shield as "fiscal agent" for operation of Title 19 in South Dakota, thus encouraging the continued cooperation and support of the medical profession in South Dakota in this program.

Dr. Leigh moved that the Council accept the resolution for transmission to the House of Delegates. The motion was seconded by Dr. Johnson and carried.

Dr. Stransky introduced resolution #5.

SOUTH DAKOTA STATE MEDICAL ASSOCIATION HOUSE OF DELEGATES

Resolution #5

Introduced by: The Council

Subject: Blue Shield

WHEREAS, South Dakota Blue Shield, under the direction of the South Dakota State Medical Association, accepted the responsibility as "Carrier" for Part B, Title 18, P.L. 89-97 in South Dakota, and

WHEREAS, South Dakota Blue Shield has developed its claims system to the point whereby problems for beneficiaries and physicians have been minimized, and

WHEREAS, South Dakota Blue Shield has continued to operate in close liaison with the medical profession,

NOW, THEREFORE BE IT RESOLVED, that the South Dakota State Medical Association commends South Dakota Blue Shield, including its officers, directors and staff, for its excellent performance as "Carrier" under the Medicare Program during the past year.

Dr. Elston moved that the Council accept the resolution for transmission to the House of Delegates. The motion was seconded by Dr. Tesar and carried.

Dr. Stransky introduced resolution #6.

SOUTH DAKOTA STATE MEDICAL ASSOCIATION HOUSE OF DELEGATES

Resolution #6

Introduced by: The Council

Subject: Blue Shield

WHEREAS, South Dakota Blue Shield has continued to recognize and serve the health care financing needs of the public, and

WHEREAS, South Dakota Blue Shield has developed a "Paid In Full" contract which is designed to provide extended benefits and "Paid In Full" benefits to its subscribers, and

WHEREAS, the physicians of South Dakota are interested in the best possible health care plans for their patients,

NOW, THEREFORE BE IT RESOLVED, that the South Dakota State Medical Association reaffirms its support of Blue Shield and urges all members to encourage the promotion of the new "Paid In Full" contract.

Dr. Elston moved that the Council accept the resolution for transmission to the House of Delegates. The motion was seconded by Dr. Tesar and carried.

Dr. Brogdon briefly discussed the Computer Project of the South Dakota Health Research Institute. The Council scheduled further discussion for the Second Council meeting.

The Fall Council Meeting was set for September 9, 1967 at 11:00 a.m. in Watertown.

There being no further business, the meeting was adjourned at 1:00 p.m.

SECOND COUNCIL MEETING**Rapid City, South Dakota****June 5, 1967**

The meeting was called to order at 11:30 p.m. by E. T. Lietzke, M.D., Chairman of the Council. Roll call was taken by Richard C. Erickson, Executive Secretary. The following Councilors were present: G. R. Bartron, M.D., C. E. Tesar, M.D., A. J. Tieszen, M.D., E. J. Perry, M.D., J. A. Muggly, M.D., M. R. Cosand, M.D., Preston Brogdon, M.D., Fred Leigh, M.D., J. J. Stransky, M.D., A. P. Reding, M.D., E. T. Lietzke, M.D., Clark Johnson, M.D., H. E. Lowe, M.D. and John Elston, M.D.

Dr. Brogdon moved to dispense with the reading of the minutes of the last meeting inasmuch as they will be published. The motion was seconded by Dr. Lowe and carried.

OLD BUSINESS

The Council decided to call Dr. James Steele into the meeting to discuss the South Dakota Health Research Institute computer project. Following a lengthy discussion Dr. Brogdon read the following resolution.

WHEREAS, There has been a communication problem between the South Dakota Health Research Institute and the Council of the South Dakota State Medical Association and,

WHEREAS, This loss of communication has caused some degree of misunderstanding between the two groups and,

WHEREAS, the South Dakota Health Research Institute was created partially by authority from the South Dakota State Medical Association therefore be it;

RESOLVED, That the Council of the South Dakota State Medical Association be made aware of any further negotiation or proposal of the South Dakota Health Research Institute before completion of such negotiations or proposals.

Dr. Brogdon moved that the Council accept this resolution. The motion was seconded by M. R. Cosand, M.D. Vote: 12 for, 2 abstained. Motion carried.

NEW BUSINESS

Dr. Clark Johnson moved that the Council send a letter of appreciation to the retired librarian at the Medical School. The motion was seconded by Dr. Perry and carried.

Dr. Bartron thanked the Council for the honor of the Community Service Award, and also for awards presented to other members of the Watertown area.

Mr. Erickson introduced the new and re-elected Councilors. They are Doctors C. E. Tesar of the Black Hills District, M. R. Cosand of the Rosebud District, H. E. Lowe of the Northwest District and H. H. Brauer of the Whetstone Valley District.

Nominations were in order for a Secretary-Treasurer to serve a three year term. Dr. Perry nominated Dr. A. P. Reding. Dr. Leigh moved that nominations cease and a unanimous ballot be cast for Dr. Reding. The motion was seconded by Dr. Stransky and carried. Dr. Reding was declared Secretary-Treasurer.

Nominations were in order for Chairman of the Council. Dr. Brogdon nominated Dr. E. T. Lietzke. Dr. Tesar moved that nominations cease and a unanimous ballot be cast for Dr. Lietzke. The motion was seconded by Dr. Lowe and carried. Dr. Lietzke was declared Chairman of the Council.

The meeting adjourned upon motion at 1:30 a.m.

FIRST HOUSE OF DELEGATES MEETING**Rapid City, South Dakota****June 3, 1967**

The meeting was called to order by Preston Brogdon, M.D., President of the South Dakota State Medical Association at 1:30 p.m. Inasmuch as James P. Steele, M.D., Speaker of the House was absent, nominations were in order for a Speaker Pro-Tem. Dr. R. J. Foley nominated Dr. McDonald as Speaker Pro-Tem of the House. Dr. Perry moved that nominations cease and a unanimous ballot be cast for Dr. McDonald. The motion was seconded by Dr. Bloemendaal and carried.

Roll call was taken by Richard C. Erickson, Executive Secretary. Present were Doctors Preston Brogdon, John Stransky, John Elston, A. P. Reding, Robert Quinn, Paul Hohm, E. J. Perry, G. Robert Bartron, J. A. Muggly, A. J. Tieszen, Fred Leigh, Harvard Lewis, E. T. Lietzke, Clark Johnson, C. E. Tesar, E. A. Johnson, G. J. Bloemendaal, Samuel Rosa, G. E. Tracy, R. Auskaps, J. A. Anderson, D. L. Scheller, C. L. Swanson, David Buchanan, G. M. Huet, J. O. Mabree, V. R. Vonburg, J. S. Devick, D. L. Ensberg, R. R. Giebink, B. J. Begley, C. J. McDonald, E. A. Pasek, Paul Aspaas, J. B. Gregg, R. J. Foley, G. W. Knabe, L. G. Behan, P. Dzintars, George Angelos, J. F. Pokorny, H. S. Shining, H. L. Frost, M. R. Cosand, L. W. Keller. A quorum was declared present.

Dr. G. E. Tracy moved to dispense with the reading of the minutes of the last meeting inasmuch as they had been published in the **Journal of Medicine**. The motion was seconded by Dr. Pasek and carried.

Dr. C. J. McDonald read the list of physicians appointed to serve on the Reference Committees. They are as follows:

Credentials Committee

E. J. Perry, M.D., Chairman
Barbara Spears, M.D.
V. R. Vonburg, M.D.

Reference Committee on Reports of Officers and Councilors

J. A. Anderson, M.D., Chairman
G. J. Bloemendaal, M.D.
Romans Auskaps, M.D.

Reference Committee on Resolutions and Memorials

D. L. Scheller, M.D., Chairman
John S. Devick, M.D.
Robert J. Foley, M.D.

Reference Committee on Reports of the Commissions on Medical Service, Communications and Allied Organizations

John Elston, M.D., Chairman
Robert Giebink, M.D.
George Angelos, M.D.

Reference Committee on Reports of the Commissions on Scientific Medicine, Internal Affairs, Legislation and Governmental Relations

Fred Leigh, M.D., Chairman
R. H. Quinn, M.D.
James H. DeGeest, M.D.

Reference Committee on Reports of Special Committees and Miscellaneous Business

G. Robert Bartron, M.D., Chairman
Bernard J. Begley, M.D.
Joseph F. Pokorny, M.D.

Nominating Committee, as appointed by the President are:

District 1	Bernard C. Gerber, M.D.
District 2	G. E. Tracy, M.D., Chairman
District 3	J. A. Muggly, M.D.
District 4	C. L. Swanson, M.D.
District 5	David Buchanan, M.D.
District 6	J. O. Mabree, M.D.
District 7	C. J. McDonald, M.D.
District 8	G. W. Knabe, Jr., M.D.
District 9	H. Streeter Shining, M.D.
District 10	Marion R. Cosand, M.D.
District 11	H. E. Lowe, M.D.
District 12	H. H. Brauer, M.D.

Inasmuch as the reports of the President, President-Elect, Vice President, Secretary-Treasurer, Delegate and Alternate Delegate to the American Medical Association, Executive Secretary, Councilors, Executive Committee and Chairman of the Council had been published in the Delegate's Handbook, it was moved by Fred Leigh, M.D. to dispense with the reading of these reports. The motion was seconded by Marion Cosand, M.D. and carried.

Dr. C. J. McDonald called for resolutions from the floor.

RESOLUTION #1 — Presented by: Seventh District Medical Society.

RESOLVED, That the members of the South Dakota State Medical Association participate only in a state program of medical assistance under Title 19 Public Law 89-97 that guarantees the freedom of choice of physicians and hospitals.

Dr. C. J. McDonald referred the resolution to the Reference Committee on Special Committees and Miscellaneous Business.

RESOLUTION #2 — Presented by: Seventh District Medical Society

RESOLVED, That the members of the South Dakota State Medical Association participate under Title 19 Public Law 89-97 only if the usual and customary fees concept is established for vendor payments.

Dr. C. J. McDonald referred the resolution to the Reference Committee on Special Committees and Miscellaneous Business.

RESOLUTION #3 — Presented by: Seventh District Medical Society

RESOLVED, That South Dakota physicians participate under Title 19 Public Law 89-97 only if given the choice of billing by assignment or direct billing under the South Dakota program.

Dr. C. J. McDonald referred the resolution to the Reference Committee on Special Committees and Miscellaneous Business.

Dr. E. T. Lietzke read Resolution #4 presented by the Council of the South Dakota State Medical Association.

RESOLUTION #4 — Presented by: Council, South Dakota State Medical Association.

RESOLVED, That the South Dakota State Medical Association urges the State Welfare Commission to designate South Dakota Blue Shield as "fiscal agent" for operation of Title 19 in South Dakota, thus encouraging the continued cooperation and support of the medical profession in South Dakota in this program.

Dr. C. J. McDonald referred the resolution to the Reference Committee on Special Committees and Miscellaneous Business.

Dr. E. T. Lietzke read Resolution #5 presented by the Council of the South Dakota State Medical Association.

RESOLUTION #5 — Presented by: Council, South Dakota State Medical Association.

RESOLVED, That the South Dakota State Medical Association commends South Dakota Blue Shield, including its officers, directors and staff, for its excellent performance as "Carrier" under the Medicare Program during the past year.

Dr. C. J. McDonald referred the resolution to the Reference Committee on Special Committees and Miscellaneous Business.

Dr. E. T. Lietzke read Resolution #6 presented by the Council of the South Dakota State Medical Association.

RESOLUTION #6 — Presented by: Council, South Dakota State Medical Association.

RESOLVED, That the South Dakota State Medical Association reaffirms its support of Blue Shield and urges all members to encourage the promotion of the new "Paid In Full" contract.

Dr. C. J. McDonald referred the resolution to the Reference Committee on Special Committees and Miscellaneous Business.

Dr. B. J. Begley read Resolution #7.

RESOLUTION #7 — Presented by B. J. Begley, M.D.

RESOLVED, That this House of Delegates re-affirm its support for the activities of SoDaPaC and AMPAC and encourage the members of this organization to support SoDaPaC and AMPAC by membership and personal effort.

Dr. C. J. McDonald referred the resolution to the Reference Committee on Special Committees and Miscellaneous Business.

The Fifth District Medical Society submitted the name of J. C. Hagin, M.D. for Life Membership in the South Dakota State Medical Association. Dr. Fred

Leigh moved that such membership be awarded Dr. Hagin. The motion was seconded by G. E. Tracy, M.D. and passed.

Dr. C. J. McDonald made the following assignments in the Delegate's Handbook to the Reference Committees for their study.

The reports on pages 1 - 26 in the Handbook are referred to the Reference Committee on Reports of Officers and Councilors.

The reports on pages 27 - 38 are referred to the Reference Committee on Reports of Commissions on Communications, Liaison with Allied Organizations and Medical Service.

The reports on pages 39 - 45 are referred to the Reference Committee on Reports of Commissions on Scientific Medicine, Internal Affairs and Legislation and Governmental Relations.

The reports on pages 46 - 47 are referred to the Reference Committee on Reports of Special Committees and Miscellaneous.

Mr. Erickson made several announcements concerning the events to be held following the House of Delegates' meeting.

The meeting was adjourned on motion duly made and seconded.

SECOND HOUSE OF DELEGATES MEETING

Rapid City, South Dakota

June 4, 1967

The meeting was called to order by James P. Steele, M.D., Speaker of the House at 1:30 p.m.

Executive Secretary Richard Erickson read the roll call. Present were Doctors Preston Brogdon, John Stransky, John Elston, A. P. Reding, James P. Steele, R. H. Quinn, Paul Hohm, E. J. Perry, G. R. Bartron, J. A. Muggly, A. J. Tieszen, Fred Leigh, Harvard Lewis, E. T. Lietzke, Clark Johnson, C. E. Tesar, H. E. Lowe, E. A. Johnson, G. J. Bloemendaal, Samuel Rosa, George McIntosh, G. E. Tracy, R. Auskaps, J. A. Anderson, D. L. Scheller, C. L. Swanson, David Buchanan, J. O. Mabee, J. S. Devick, R. R. Giebink, B. J. Begley, C. J. McDonald, E. A. Pasek, Bill Church, J. B. Gregg, R. J. Foley, G. W. Knabe, Jr., P. Dzintars, George Angelos, H. L. Frost, J. F. Pokorny, H. S. Shining, M. R. Cosand, P. Lakstigala and L. W. Keller. A quorum was declared present.

Mr. Erickson read the minutes of the previous meeting. Dr. Bartron moved to accept the minutes as read. The motion was seconded by Dr. Tracy and carried.

Mr. Erickson introduced Mr. Joseph Armbruster of the Health Insurance Council who gave a brief presentation.

Dr. G. E. Tracy, Chairman of the Nominating Committee, read the following report:

The Nominating Committee met in the Crystal Room at 3:30 p.m. on June 4, with ten members present.

The following recommendations are made for Councilor for 3-year terms:

9th District	C. E. Tesar, M.D.
10th District	M. R. Cosand, M.D.
11th District	H. E. Lowe, M.D.
12th District	H. H. Brauer, M.D.

The following recommendations are made for officers of the Association:

President	John J. Stransky, M.D.
President Elect	John Elston, M.D.
Vice President	E. A. Johnson, M.D. and Robert H. Quinn, M.D.

It should be noted that there was a tie vote by the Committee, therefore the committee elected to present both names.

The following recommendation is made for Speaker of the House:

Robert Hayes, M.D.

The Nominating Committee recommends that Watertown replace Mitchell as the 1969 site of the annual convention. In addition, it is recommended that Yankton be designated for the 1970 convention providing facilities are adequate.

Mr. Speaker, the Committee recommends the adoption of this report.

Dr. Perry moved that nominations for Councilor of the Ninth District be closed and a unanimous ballot be cast for C. E. Tesar, M.D. The motion was seconded by Dr. Foley and carried.

Dr. Bartron moved that nominations for Councilor of the Tenth District be closed and a unanimous ballot be cast for M. R. Cosand, M.D. The motion was seconded by Dr. Perry and carried.

Dr. Leigh moved that nominations for Councilor of the Eleventh District be closed and a unanimous ballot be cast for H. E. Lowe, M.D. The motion was seconded by Dr. Knabe and carried.

Dr. Scheller moved that nominations for Councilor of the Twelfth District be closed and a unanimous ballot be cast for H. H. Brauer, M.D. The motion was seconded by Dr. Leigh and carried.

Dr. Perry moved that nominations for President be closed and that a unanimous ballot be cast for Dr. John Stransky. The motion was seconded by Dr. Lewis and carried.

Dr. Leigh moved that nominations for President Elect be closed and that a unanimous ballot be cast for Dr. John Elston. Dr. Knabe seconded the motion and it carried.

Dr. Perry moved that nominations for Vice President be closed and a written ballot be cast. Dr. Auskaps seconded the motion and it carried. On a written ballot, Dr. Robert Quinn was elected to the office of Vice President.

Dr. Clark Johnson moved that nominations for Speaker of the House be closed and a unanimous ballot be cast for Dr. Robert Hayes. The motion was seconded by Dr. Lowe and carried.

Dr. Tesar moved for the acceptance of the Nominating Committee's report concerning possible sites for future conventions. The motion was seconded by Dr. Bartron and carried.

Dr. Tracy moved for the adoption of the Nominating Committee's report. The motion was seconded by Dr. Bartron and carried.

REPORT OF THE REFERENCE COMMITTEE ON CREDENTIALS

The credentials of the Delegates to the South Dakota State Medical Association were checked and the following delegates, alternate delegates, officers and councilors were present: Doctors P. Preston Brogdon, John Stransky, John Elston, A. P. Reding, James P. Steele, Robert Quinn, Paul Hohm, E. J. Perry, G. Robert Bartron, J. A. Muggly, A. J. Tieszen, Fred Leigh, Harvard Lewis, E. T. Lietzke, Clark Johnson, C. E. Tesar, H. E. Lowe, E. A. Johnson, G. J. Bloemendaal, Samuel Rosa, George McIntosh, G. E. Tracy, R. Auskaps, J. A. Anderson, D. L. Scheller, C. L. Swanson, David Buchanan, G. Huet, J. O. Mabee, V. R. Vonburg, J. S. Devick, R. R. Giebink, B. J. Begley, C. J. McDonald, E. A. Pasek, Bill Church, J. B. Gregg, Paul Aspaas, R. J. Foley, G. W. Knabe, L. G. Behan, P. Dzintars, George Angelos, J. F. Pokorny, H. S. Shining, H. L. Frost, M. R. Cosand, P. Lakstigala, and L. W. Keller.

A quorum was present for the meeting of the House of Delegates and the credentials of those in attendance were in order.

Total registration for the convention is 350; including 172 physicians, 11 guests, 76 exhibitors, and 91 auxiliary members.

Respectfully submitted,

REFERENCE COMMITTEE ON CREDENTIALS

E. J. Perry, Chairman

Dr. Perry moved for the adoption of the report of the Reference Committee on Credentials. The motion was seconded by Dr. Bloemendaal and carried.

REPORT OF THE REFERENCE COMMITTEE ON REPORTS OF OFFICERS AND COUNCILORS

The report of the President was studied and reviewed, and the Committee wishes to commend the

President for an excellent year. A special note was taken of the number of visitations and meetings he attended throughout the year.

The Committee considered the reports of the President Elect, Vice President and an oral report by the Secretary-Treasurer.

The report of the Delegate and Alternate Delegate to the AMA was reviewed. The Committee would like to give special recognition to them for their diligence in performance of their duties on behalf of the State Society.

The report of the Speaker of the House was reviewed. The Committee suggests that the current practice of naming the Reference Committee Chairmen and Committee members in advance be continued. The Committee suggests that at least one member who has previously served on the individual commissions be considered for appointment to the Reference Committees.

The reports of the Councilor-at-Large and Executive Committee were reviewed.

The report of the Executive Secretary was considered and was found satisfactory. The Committee took special note of the great number of miles traveled throughout the year. It was suggested that the Executive Secretary be commended for his excellent work on the State Legislative level. The Committee was pleased to note that the South Dakota Journal of Medicine continued to operate with a surplus. It was heartily recommended that all the members of the Society read the summary of the Executive Secretary's report.

The reports of the Councilors of the various Districts were reviewed and found satisfactory as a whole; however it is suggested that reports remain concise in lieu of recitation of minutes. Only nine reports were submitted, one which was received late. It was noted by the Committee that the reports from the Rosebud District, the Northwest District, and the Whetstone Valley District were omitted. The Committee would heartily suggest that such reports be submitted, properly documented, to the state office well in advance of future deadlines.

The report of the Chairman of the Council was considered and found satisfactory.

The Committee recommends the acceptance of the report as a whole.

Respectfully submitted,

REFERENCE COMMITTEE ON REPORTS
OF OFFICERS AND COUNCILORS

J. A. Anderson, M.D., Chairman

Dr. Anderson moved the acceptance of this report. The motion was seconded by Dr. Auskaps and carried.

Dr. D. L. Scheller, Chairman of the Committee on Resolutions and Memorials read the following report:

REPORT OF THE REFERENCE COMMITTEE ON RESOLUTIONS AND MEMORIALS

WHEREAS, the Black Hills District Medical Society and the Ladies Auxiliary members have been so thorough in making arrangements for the success of the combined meeting on our 86th Anniversary,

BE IT RESOLVED, that the South Dakota State Medical Association give its voice in appreciation and thanks to the local physicians of Rapid City and their wives.

WHEREAS, the management of the Sheraton-Johnson Hotel and Gill's Sun Inn, Tip Top and Imperial Motels have been so cooperative in providing facilities for the success of the 86th Anniversary meeting of the South Dakota State Medical Association,

BE IT RESOLVED, that the South Dakota State Medical Association extend its thanks and appreciation to the Sheraton-Johnson Hotel and Gill's Sun Inn, Tip Top and Imperial Motels.

WHEREAS, the Chamber of Commerce has provided excellent service in making it possible for the success of the working arrangements,

BE IT RESOLVED, that the South Dakota State Medical Association extend its thanks and appreciation to the Rapid City Chamber of Commerce.

WHEREAS, the Rapid City Journal and KOTA radio and T.V. have been most cooperative in presenting the public news of the 86th annual meeting of the South Dakota State Medical Association,

BE IT RESOLVED, that the South Dakota State Medical Association extend its thanks to the Rapid City Journal and KOTA radio and T.V.

WHEREAS, the Gold City Inn of Rapid City has provided facilities for the Stag Party contributing much to the success of the meeting and entertainment,

BE IT RESOLVED, that the South Dakota State Medical Association extend its thanks to the Gold City Inn.

WHEREAS, the Esquire Club of Rapid City has provided facilities for the annual banquet contributing much to the success of the meeting,

BE IT RESOLVED, that the South Dakota State Medical Association extend its thanks to the Esquire Club.

WHEREAS, the management of the Surbeck Center, South Dakota School of Mines, has provided facilities for the general sessions of our 86th annual meeting and contributed greatly to the success of our convention,

BE IT RESOLVED, that the South Dakota State Medical Association extend its thanks to the management of the Surbeck Center.

WHEREAS, the Ninth District Medical Society has provided for golfing privileges at the Arrowhead Country Club,

BE IT RESOLVED, that the South Dakota State Medical Association extend its thanks to the Ninth District Society and the Arrowhead Country Club.

Dr. Scheller moved to accept this portion of the report of the Reference Committee on Resolutions and Memorials. The motion was seconded by Dr. Bartron and carried.

The Reference Committee also recommends that \$50.00 be donated to the South Dakota State Medical School Endowment Association for each of the physicians who passed away during the past year and are listed in the Handbook and, in addition, for A. P. Scheib, M.D. of Watertown who expired in May, 1967.

Respectfully submitted,
REFERENCE COMMITTEE ON
RESOLUTIONS AND MEMORIALS
D. L. Scheller, M.D., Chairman

Dr. Scheller moved the acceptance of this report. The motion was seconded by Dr. Tracy and carried.

Dr. John Elston, Chairman of the Reference Committee on Commissions on Medical Service, Communications and Liaison with Allied Organizations read the following report.

REPORT OF THE REFERENCE COMMITTEE ON COMMISSION ON MEDICAL SERVICE, COMMUNICATIONS AND LIAISON WITH ALLIED ORGANIZATIONS

The Reference Committee reviewed the Report of the Commission on Medical Service which included:

1. Hospital Utilization — The Reference Committee recommends the acceptance of this portion of the report. Dr. Elston moved for the acceptance of this portion of the Reference Committee's report. The motion was seconded by Dr. Bartron and carried.

2. Rural Health—The Reference Committee recommends the acceptance of this portion of the report. Dr. Elston moved for the acceptance of this portion of the Reference Committee's report. The motion was seconded by Dr. Tracy and carried.

3. Traffic Safety — The Reference Committee recommends the acceptance of this portion of the report. Dr. Elston moved for the acceptance of this portion of the report. The motion was seconded by Dr. Bartron and carried.

4. South Dakota Planning Council for Nursing Resources — The Reference Committee recommends the acceptance of this portion of the report. Dr. Elston moved for the acceptance of this portion of the Reference Committee's report. The motion was seconded by Dr. Perry and carried.

5. Heart-Cancer-Stroke Planning Committee — The Reference Committee recommends the acceptance of this portion of the report. Dr. Elston moved for the acceptance of this portion of the Reference Committee's report. The motion was seconded by Dr. Bartron and carried.

6. Immunization - School Health — The Reference Committee recommends that the House of Delegates take the necessary action to implement Recommendation #3 as set forth by the Commission on Medical Service as pertains to this portion of the report. Dr. Elston moved that the House of Delegates take the necessary action to implement Recommendation #3 as set forth by the Commission on Medical Service as pertains to this portion of the report. The motion was seconded by Dr. Tracy and carried.

7. Comprehensive Health Planning — The Reference Committee recommends that the House of Delegates urge the Ad Hoc Committee on Comprehensive Health Planning to pursue its studies of the Comprehensive Health Plans of the state and report as soon as possible its findings and recommendations to the Council. Dr. Elston moved that the House of Delegates urge the Ad Hoc Committee on Comprehensive Health Planning to pursue its studies of the Comprehensive Health Plans of the state and report as soon as possible its findings and recommendations to the Council. The motion was seconded by Dr. Perry and carried.

8. Board of Medical Examiners — The Reference Committee recommends the acceptance of this portion of the report. Dr. Elston moved for the acceptance of this portion of the Reference Committee's Report. The motion was seconded by Dr. Buchanan and carried.

9. Scholarships to Medical Students — The Reference Committee recommended the acceptance of this portion of the report. Dr. Elston moved for the acceptance of this portion of the Reference Committee's report. The motion was seconded by Dr. Tracy and carried.

10. Medical School Affairs — The Reference Committee recommends that the Medical School Affairs Committee be instructed to consult with the President of the University of South Dakota to embark upon an active study of the feasibility of future medical school development in South Dakota. Dr. Elston moved that the Medical School Affairs Committee be instructed to consult with the President of the University of South Dakota to embark upon an active study of the feasibility of future medical school development in South Dakota. The motion was seconded by Dr. Bartron and carried.

Dr. Elston moved for the acceptance of the portion of the report regarding the Commission on Medical Service. The motion was seconded by Dr. Tracy and carried.

The Reference Committee reviewed the report of the Commission on Communications. Dr. Elston moved for the acceptance of this report. The motion was seconded by Dr. Bartron and carried.

The Reference Committee reviewed the report of the Commission on Liaison with Allied Organizations. Dr. Elston moved for the acceptance of this report. The motion was seconded by Dr. Tracy and carried.

Dr. Elston moved for the acceptance of the report of the Reference Committee on Reports of the Commissions on Medical Service, Communications, and Liaison with Allied Organizations as a whole. The motion was seconded by Dr. David Buchanan and carried.

Respectfully submitted,
REFERENCE COMMITTEE ON REPORTS
OF THE COMMISSION ON MEDICAL
SERVICE, COMMUNICATIONS AND LIAISON
WITH ALLIED ORGANIZATIONS
John T. Elston, M.D., Chairman

Dr. Fred Leigh, Chairman of the Reference Committee on the Commissions on Scientific Medicine, Internal Affairs and Legislation and Governmental Relations read the following report.

REPORT OF THE REFERENCE COMMITTEE ON REPORTS OF THE COMMISSIONS ON SCIENTIFIC MEDICINE, INTERNAL AFFAIRS, AND LEGISLATION AND GOVERNMENTAL RELATIONS

The Reference Committee considered the report of the Commission on Scientific Medicine and recommends the acceptance of this report.

The Reference Committee considered the report of the Commission on Internal Affairs and recommends the acceptance of this report.

The Reference Committee considered the report of the Commission on Legislation and Governmental Relations and recommends the acceptance of this report.

The Committee recommends the acceptance of the reports as a whole.

Respectfully submitted,

REFERENCE COMMITTEE ON REPORTS OF THE COMMISSIONS ON SCIENTIFIC MEDICINE, INTERNAL AFFAIRS, AND LEGISLATION AND GOVERNMENTAL RELATIONS

Fred Leigh, M.D., Chairman

Dr. Leigh moved for the acceptance of this report. The motion was seconded by Dr. Bartron and carried.

Dr. Bartron, Chairman of the Reference Committee on Reports of Special Commissions and Miscellaneous Business, read the following report.

REPORT OF THE REFERENCE COMMITTEE ON REPORTS OF SPECIAL COMMITTEES AND MISCELLANEOUS BUSINESS

The Reference Committee considered the report of the State Utilization and Insurance Review Committee. The Reference Committee recommends the acceptance of this report. Dr. Bartron moved for the acceptance of this report. The motion was seconded by Dr. Brogdon and carried.

The Reference Committee considered the report of the Grievance Committee. The Reference Committee recommends the acceptance of this report. Dr. Bartron moved for the acceptance of this report. The motion was seconded by Dr. Leigh and carried.

The Reference Committee considered Resolution #1, submitted by the Seventh District Medical Society. The Reference Committee recommends that the resolution be amended to read as follows:

RESOLVED, That the members of the South Dakota State Medical Association be urged to participate only in a state program of medical assistance under Title 19, Public Law 89-97 that guarantees the freedom of choice of physicians and hospitals.

The Reference Committee recommends adoption of Resolution #1 as amended. Dr. Bartron moved for the adoption of Resolution #1 as amended. The motion was seconded by Dr. Auskaps and carried.

The Reference Committee considered Resolution #2, submitted by the Seventh District Medical Society and recommends that the resolution be amended to read as follows:

RESOLVED, That the members of the South Dakota State Medical Association be urged to participate under Title 19, Public Law 89-97 only if the usual and customary fees concept is established for vendor payments.

The Reference Committee recommends adoption of Resolution #2 as amended. Dr. Bartron moved that Resolution #2 be adopted as amended. The motion was seconded by Dr. Tracy and carried.

The Reference Committee considered Resolution #3, submitted by the Seventh District Medical Society. The Reference Committee recommends that the resolution be amended to read as follows:

RESOLVED, That the South Dakota State Medical Association encourages amendments to Title 19, Public Law 89-97 granting physicians the choice of billing by assignment or direct billing to patients.

The Reference Committee recommends that Resolution #3 be adopted as amended. The vote of the Reference Committee on this resolution was two in favor of the amendment with one member abstaining. Dr. Bartron moved that Resolution #3 be adopted as amended. The motion was seconded by Dr. Hohm and carried.

The Reference Committee considered Resolution #4, submitted by the Council and recommends the adoption of this resolution. Dr. Bartron moved for the adoption of Resolution #4. The motion was seconded by Dr. Reding and carried.

The Reference Committee considered Resolution #5, submitted by the Council and recommends the adoption of this resolution. Dr. Bartron moved for the adoption of Resolution #5. The motion was seconded by Dr. Leigh and carried.

The Reference Committee considered Resolution #6 submitted by the Council and recommends the adoption of this resolution. Dr. Bartron moved that Resolution #6 be adopted. The motion was seconded by Dr. Scheller and carried.

The Reference Committee considered Resolution #7, submitted by Dr. B. J. Begley and recommends the adoption of this resolution. Dr. Bartron moved for the adoption of Resolution #7. The motion was seconded by Dr. Hohm and carried.

Respectfully submitted,

REFERENCE COMMITTEE ON SPECIAL COMMITTEES AND MISCELLANEOUS BUSINESS

G. Robert Bartron, M.D., Chairman

Dr. Bartron moved for the acceptance of the reports of the Reference Committee on Special Committees and Miscellaneous Business. The motion was seconded by Dr. Tracy and carried.

Dr. Bartron spoke briefly encouraging physicians in South Dakota to become more active in legislative affairs.

Dr. James P. Steele administered the Presidential Oath of Office to John Stransky, M.D.

Following announcements regarding upcoming events in conjunction with the Annual Meeting, Dr. Steele voiced his appreciation to all those involved in making his tenure as Speaker of the House a success.

Dr. Perry moved that the meeting be adjourned. The motion was seconded by Dr. Tracy and carried.

PRESIDENTIAL OATH OF OFFICE

I solemnly swear that I shall carry out the duties of the President of the South Dakota State Medical Association to the best of my ability. I shall strive constantly to maintain the ethics of the medical profession and to promote the public health and welfare. I shall dedicate myself and my office to improving health standards and to the task of bringing increasingly improved medical care to the people of South Dakota. I shall uphold the Constitution and Bylaws of the AMA and the South Dakota State Medical Association. I shall champion the cause of freedom in medical practice and freedom for all my fellow Americans.

I do solemnly swear that I will discharge the duties of this office to the best of my ability, so help me God.

REPORT OF THE PRESIDENT

As the President of your Association, I had a busy and enlightening year.

It was my privilege to visit all but one district, and that visitation was prevented by impossible weather conditions.

I attended several meetings in Chicago, one of which was the Annual Meeting of the AMA.

I was also present in Las Vegas, Nevada, for the Clinical Meeting, the last of November and first of December.

I have attended numerous other meetings around the State and estimate that the length of travel was somewhere in excess of 30,000 miles.

On the negative side of the balance sheet, there has been the beginning of MEDICARE with all its problems and the bitter controversy of the Pathologists and Radiologists with the payment principles set forth in the Medicare regulations. We have seen ourselves become involved with varying amounts of success with other social legislation such as: Head Start, Community Improvement Programs, and Heart, Cancer, and Stroke Program.

It has been a time of having to look at things from a practical standpoint so we could at least direct some of these programs so the medical aspects of them would benefit the people at the least cost both in monies and effort.

I believe we have had our greatest success in the direction that the Heart, Cancer, and Stroke Program has taken. I would invite your cooperation with its State Director, Dr. Robert H. Hayes.

The selection of a Dean for the Medical School and the possibilities of the school being extended to a 4 year school have been of great interest this year. There has been no decision on the new Dean at this time, but it is hoped that this will be resolved by the time of our annual meeting.

I count it an experience of a lifetime, to have served as your President and it is my hope that I may be privileged to continue to serve our profession in any capacity where I may be of help.

Respectfully submitted,
Preston Brogdon, M.D.
President

The Report of the President was studied and reviewed, and the Committee wishes to commend the President for an excellent year. A special note was taken of the number of visitations and meetings he attended throughout the year.

REPORT OF THE PRESIDENT-ELECT

It has been my privilege this past year to serve as the President-Elect of our State Medical Association. In this capacity I have taken part in the deliberations of the Council and the Executive Committee of the State Association. I have also attended the House of Delegates meetings of the AMA at the annual and clinical sessions this past year.

As a member of the Title XIX Advisory Committee appointed by the Chairman of the Council, I have represented the State Medical Association in appearances before the State Welfare Commission.

Respectfully submitted,
John J. Stransky, M.D.
President-Elect

The Committee considered the report of the President-Elect and recommends the acceptance of this report.

REPORT OF THE VICE-PRESIDENT

During the last year there have been no specific assigned duties other than participation in the deliberations of the Council which I have done. There have been no problems or particular occurrences which have specifically affected the Office of Vice President.

Respectfully submitted,
John T. Elston, M.D.
Vice President

The Committee considered the report of the Vice-President and recommends the acceptance of this report.

REPORT OF THE SECRETARY-TREASURER

As your officer, I have attended all Executive Committee and Council meetings during the year. The duties of this office were carried out with the assistance of our competent executive secretary, Richard C. Erickson, and the staff at the association office.

Respectfully submitted,
A. P. Reding, M.D.
Secretary-Treasurer

The Committee considered this report as well as an oral report by the Secretary Treasurer in which he indicated that a modest surplus had been obtained. The Committee recommends the acceptance of this report.

REPORT OF THE AMA DELEGATE AND ALTERNATE DELEGATE

The House of Delegates of the AMA held two meetings in 1966. The annual meeting was held in Chicago, Illinois, June 26-30. Your state association was represented at this meeting by your president, Preston Brogdon, M.D.; your president-elect, John J. Stransky, M.D.; your executive secretary, Richard C. Erickson; your delegate, A. P. Reding, M.D. and your alter-

nate delegate, Robert H. Quinn, M.D. The 20th annual clinical meeting was held in Las Vegas, Nevada, November 27-30. Your state association was represented by Preston Brogdon, M.D.; John J. Stransky, M.D.; Richard C. Erickson, Mrs. Patty Butler; A. P. Reding, M.D. and Robert H. Quinn, M.D.

Detailed reports of the action taken by the House of Delegates at these meetings have been published in the **AMA News**, **JAMA** and the **South Dakota Journal of Medicine**. All special and current information has been sent out regularly from the association office to all doctors in the state.

Respectfully submitted,
A. P. Reding, M.D.
AMA Delegate
Robert H. Quinn, M.D.
Alternate AMA Delegate

The report of the Delegate and Alternate Delegate to the AMA was reviewed. The Committee would like to give special recognition to them for their diligence in performance of their duties in behalf of the State Society.

REPORT OF SPEAKER OF THE HOUSE

During the past year the Speaker of the House has served on the Executive Committee and the Council of the State Medical Association and has participated in its decisions and actions. There has been no traveling other than this and there have been no requests of the Speaker of the House for speaking engagements or other activities in connection with the State Medical Association. Before the annual meeting the Reference Committees will be arranged and members of the House of Delegates asked to serve as members of the Reference Committees.

The Speaker wishes to state his appreciation for the privilege of serving in this office and has appreciated the honor it carries. He wishes to state his willingness to continue to help carry on the functions of the State Medical Association any way possible.

Respectfully submitted,
James P. Steele, M.D.
Speaker of the House

The report of the Speaker of the House was reviewed. The Committee suggested that the current practice of naming the Reference Committee Chairmen and Committee members in advance be continued. The Committee suggests that at least one member who has previously served on the individual commissions be considered for appointment to the Reference Committees.

REPORT OF THE COUNCILOR-AT-LARGE

Your Councilor-at-Large was in attendance at all meetings of the Council. The Council appointed me as their representative in the Advisory Committee of Heart, Cancer and Stroke. I was also a member of the Executive Committee of Heart, Cancer and Stroke where I acted in good faith for our organization. We thus culminated a planning grant with Nebraska which is now in effect. The securing of Dr. Robert Hayes as our Co-ordinator for our State has now started our planning grant on the road.

The Council appointed me as Chairman of a Committee to be liaison with the State Department of Health and the Governor of our State. We had numerous meetings with them and feel that much has been accomplished in furthering the interests of our State Medical Association in the bringing of better understanding between the Medical Association and powers to be at Pierre.

Respectfully submitted,
Paul Hohm, M.D.
Councilor-at-Large

The Reference Committee reviewed the report of the Councilor-at-Large and recommends the acceptance of this report.

REPORT OF THE EXECUTIVE COMMITTEE

The Executive Committee has met several times during the year, both in person and on conference calls. Decisions are reported in other sections of these reports.

Respectfully submitted,
Preston Brogdon, M.D.
Chairman

The Reference Committee reviewed the report of the Executive Committee and recommends the acceptance of this report.

REPORT OF THE EXECUTIVE SECRETARY

1966-67 has indeed been a busy year for your executive staff. The "Medicare" program has of necessity required a great deal of time this year. With such programs as Heart, Cancer, Stroke and the Comprehensive Health Planning Program, we at the executive office look to a very busy schedule for the year 1967-68.

Liaison with District Societies

During the year, your executive secretary attended fourteen District Medical Society meetings. All but one district was visited at least once. A number of the meetings were attended in conjunction with Dr. Brogdon's official visitation.

Public Relations

Your Association has continued to encourage physicians to attend national meetings throughout the year, and a number of these meetings included SDSMA physician representation. In addition, your Executive Secretary attended eleven (11) national meetings; seventeen (17) State meetings; eight (8) Blue Shield meetings, and delivered five (5) speeches. 35,000 miles were traveled by the Executive Secretary and an additional 20,000 miles by other staff personnel. We have continued to supply pamphlets (some 20,000) dealing with all phases of medicine to clubs and organizations. We have also furnished publicity material to the news media. We are planning a booth for the State Fair, which should round out our public relations program.

Headquarters Building

Remodeling of the headquarters building and construction of a 600 square foot addition was completed in February. Blue Shield loaned \$9,067.45 to the Association to finance the addition. The **Supreme Court did not** rule in the Association's favor concerning the tax status of the building, and it would appear that we will pay property tax. However, our legal counsel asked for reconsideration of the decision in December, and of April 10, we had not been notified of the Court's final decision. All yearly interest due on notes was paid in addition to retiring \$5,033.61 in principal and notes.

Legislation

Health legislation on the national level continues to be of concern and your executive staff attempts to keep abreast of legislative activities, especially in the area of Title 18 and 19 of Medicare. At the State level, your Executive Secretary spent most of January, February, and March in Pierre, working with the Legislature. Nineteen (19) bills were introduced which directly or indirectly affected medicine in South Dakota. Bills sponsored by the Association including L.S.D. drug control and an appropriation for a Medical School addition were passed. Bills dealing with pharmacy licensing and podiatry were amended, with our help, and a bill to establish a state-owned Medicare Service Corporation was killed in committee. The latter was opposed by the Association. It becomes apparent that medicine will be faced with more "problem legislation" in the future and with this, it is important for physicians to become acquainted with their legislators and to discuss issues as they arise.

Blue Shield, Medicare and Other Programs

"Paper" has become the major problem in the fiscal programs within our organization. To handle the load

of Medicare, Blue Shield, OAA, and Armed Services Medicare, it has become necessary to increase your staff to forty six (46) people, including five (5) men. Last year, the organization employed thirteen (13) people. Blue Shield observed its 10th anniversary by increasing its surplus \$147,900 for the year. We cannot, however, be too optimistic inasmuch as we have not yet reached the recommended surplus level. As of December 31, 1966, Blue Shield paid out \$960,300 in benefits. Add to this OAA, MAA, ODMC and Medicare (6 months) payments of \$960,000, or a total of \$1,920,300 distributed to physicians and patients in South Dakota.

Journal of Medicine

The Journal continues to grow in quality, size and income. Advertising has increased some 25%, thus enabling us to increase the scientific section. A new feature section on the medical school is planned which we hope will add interest to the publication. The Journal is operating in the black and every effort will be made to maintain this sound financial situation.

Summary

The Association continues to provide as many services to its members and the public as financially possible. However the financial picture **does not** look too good for future years. Payment of back taxes of approximately \$15,000 will deplete **all** reserves of the Association. We desperately need a field man to help with legislative activities, meetings and field problems. The building is no longer adequate for future needs. If Blue Shield is to operate Title 19, it will be necessary to add an addition or occupy other space. Add to these problems, the increased cost of office operation (I need not tell you of this) and it is apparent that the Association must look to the possibility of a dues increase in 1968 or 1969. Definite decisions concerning the building will have to be made later this summer when we know what will happen regarding Title 19.

My sincere thanks to the officers, councilors, commission chairmen, commission and committee members and staff who have worked so diligently throughout the year. Special thanks must be given to Mrs. Patty Butler, Administrative Assistant, and Randy Tuffs, Assistant Director, Blue Shield, for their many hours of overtime throughout the past year and for their devotion to the physicians and their principles.

Respectfully submitted,
Richard C. Erickson
Executive Secretary

The report of the Executive Secretary was considered and was found satisfactory. The Committee took special note of the great number of miles traveled throughout the year. It was suggested that the Executive Secretary be commended for his excellent work on the State Legislative level. The Committee was pleased to note that the South Dakota Journal of Medicine continued to operate with a surplus. It was heartily recommended that all the members of the Society read the summary of the Executive Secretary's report.

**REPORT OF THE COUNCILOR
FIRST DISTRICT**

MEMBERSHIP: 56 Members

OFFICERS:

President—	Karlis Zvejnieks, M.D.
Vice President—	William Taylor, M.D.
Secretary-Treasurer—	David Seaman, M.D.
Councilor—	E. J. Perry, M.D.
Censors—	J. A. Eckrich, Sr., M.D. C. B. Murdy, M.D. E. A. Rudolph, M.D.
Delegates—	G. J. Bloemendaal, M.D. Bernard Gerber, M.D. Paul Bunker, M.D.

Alternates— Samuel Rosa, M.D.
Walter Miller, M.D.
George McIntosh, M.D.

The Aberdeen District Medical Society holds monthly dinner meetings on the first Wednesday of each month from September to June. The following is a list of the events and speakers.

SEPTEMBER:
Preston Brogdon, M.D., President of the South Dakota State Medical Association visited the Aberdeen District. Mr. Richard C. Erickson, Executive Secretary of the Association was also present. The meeting was also attended by the Society Auxiliary.

OCTOBER:
The program was presented by Ronald Olin, M.D., Internist at the Fargo Clinic, Fargo, North Dakota, who spoke on "Diseases of Medical Progress."

NOVEMBER:
A combined meeting with the Woman's Auxiliary of the District Society was held. Irvin Belzer, M.D., State Tuberculosis Control Officer discussed current Tuberculosis Care and Programs in South Dakota.

DECEMBER:
The annual election of Officers and committee appointments were accomplished.

JANUARY:
The revised final draft of the Aberdeen District Society Bylaws was discussed and acted upon at this meeting.

FEBRUARY:
James LaFave, M.D. of the University of Minnesota Burn Treatment Center spoke on the "Treatment of Burns by Silver Nitrate."

MARCH:
Noel deDianous, M.D. of Aberdeen, South Dakota, reported on his work in a Mexican Medical Mission.

APRIL:
Preston Brogdon, M.D., president of the South Dakota State Medical Association discussed the Current Governmental Trends in Medicine.

MAY:
A clinical pathological conference was presented by W. T. Sweeney, M.D. and D. W. Powers, M.D., Pathologists from St. Luke's Hospital, Aberdeen, S. D.

Respectfully submitted,
E. J. Perry, M.D.
Councilor, First District

The Committee considered the report of the Councilor of the First District Medical Society and recommends the acceptance of this report.

**REPORT OF THE COUNCILOR
SECOND DISTRICT**

MEMBERSHIP: 28 Members (including one honorary)

OFFICERS:
President E. H. Heinrichs, M.D.
Vice President A. K. Brevik, M.D.
Secretary-Treasurer T. J. Wrage, Jr., M.D.
COUNCILOR: G. Robert Bartron, M.D.
BOARD OF CENSORS: C. F. Ryan, M.D.
J. J. Stransky, M.D.
C. R. Stoltz, M.D.

DELEGATES:
One year Gerald Tracy, M.D.
Two years Romans Auskaps, M.D.
ALTERNATES: C. J. Clark, M.D.
D. N. Fedt, M.D.

The Watertown District Medical Society holds monthly dinner meetings on the first Tuesday of each month from September to June. In addition to the regular business meetings, the following programs were presented during the year.

April, 1966
The program was presented by Dr. Bill G. Church, President of SoDaPac, who discussed

medicine's role in active politics, urging support of SoDaPac and AMPAC and its programs of electing candidates favorable to medicine's point of view.

May, 1966
Instruction to delegates for the upcoming state medical meeting.

September, 1966
A program was presented by a local attorney, Mr. Ross Oviatt, who gave a talk on the relationship between the law profession and the medical profession. He followed this with a brief discussion concerning the obscurity in the meaning of the phrase "within reasonable medical certainty" as used today in the courts.

November, 1966
A program was presented by Dr. Irvin Belzer, the State Tuberculosis Control Officer, reporting on the Tuberculosis Control Program in the state of South Dakota.

December, 1966
Election of officers. This was also the meeting at which we had the official visitation of Dr. Preston Brogdon, the State President, who spoke briefly on the interim meeting of the AMA. He also discussed salient points of Title XIX and other current problems which are of interest to the doctors of South Dakota. Richard Erickson, Executive Secretary of the State Association, also spoke briefly, particularly emphasizing the recent expansion of the state headquarters and the handling of Medicare through Blue Shield.

February, 1966
The program consisted of a discussion by Dr. John Lowe, medical consultant to the State Health Department, on utilization review.

Respectfully submitted,
G. Robert Bartron, M.D.
Councilor, Second District

The Committee considered the report of the Councilor from the Second District Medical Society and recommends the acceptance of this report.

**REPORT OF THE COUNCILOR
THIRD DISTRICT**

The Third District Medical Society held six meetings during the past year.

A meeting was held April 14, 1966, at Brookings. The scientific program was presented by Dr. H. P. Gross of Sioux Falls who spoke on "Phocomelism."

The June meeting was held at Madison at the Country Club with golf in the afternoon and the scientific program was presented by Dr. E. A. Banner of the Mayo Clinic who spoke on "Erythroblastosis Fetalis."

In August the meeting was held at the Brookings Country Club. Golf was played in the afternoon. Dr. Magni Davidson of Brookings, talked on a trip he had recently taken to Iceland and Norway. Richard Erickson discussed Medicare and Associated Services with the group. A sound movie symposium on "Diagnosis and Treatment of Hypothyroidism" was shown.

The October meeting was held in Arlington, with the scientific meeting being held in Dr. Scheller's office. Dr. Brogdon, the State President, made his official visit and explained some of the problems of the Association.

The December meeting was held at Flandreau. Mr. Richard Erickson gave a discussion, namely on the administration of Blue Shield-Blue Cross, Medicare, and so forth. Election of officers was held and the following were elected:

President	R. G. Belatti, M.D.
Vice President	R. E. Shaskey, M.D.
Secretary-Treasurer	C. M. Kershner, M.D.
Delegates	Doctors Anderson and Scheller
Alternates	Doctors Muggly and Wold
Censors	Doctors Roberts and Lushbough

The February, 1967, meeting was held at Brookings. The scientific program was put on by R. E. Shaskey, M.D. of Brookings, who discussed briefly drug therapy in convulsive disorders and the treatment of meningitis. The second part of the program was the differential diagnosis and treatment of stroke.

The next meeting is to be held in April in Madison.

Respectfully submitted,
J. A. Muggly, M.D.
Councilor, Third District

The Committee considered the report of the Councilor from the Third District Medical Society. The Committee recommends acceptance of this report.

REPORT OF THE COUNCILOR FOURTH DISTRICT

May 10, 1966

A business meeting was held in the 5th floor Conference Room of St. Mary's Hospital for the purpose of instructing the Delegates and Councilor to the State Medical Meeting. All resolutions were discussed and voted upon. A resolution to move the State Medical Headquarters to Pierre was adopted and was to be presented to the Council for action.

May 29, 1966

A special meeting was held at the St. Charles Hotel in Pierre, South Dakota. The dinner was followed by a Scientific Program presented by Dr. Phil Trommer of Philadelphia who discussed the newer aspects and concepts of Gouty Arthritis.

January 17, 1967

The dinner meeting was followed by the business session which was held in the Holiday Inn in Pierre, South Dakota. Sister Kitchen discussed the Community Action Program, asking the Medical District to endorse the program study. Following her presentation, the Fourth District went on record as follows: The Fourth District Medical Society will serve in the capacity of Advisor concerning any medical program which might come out of the initial survey; but, is not in a position as a society to guarantee medical care to staff members, or other members, or persons.

The election of officers for the coming year was then held, the results of which are as follows:

President	Dr. Simon
Vice President	Dr. Collins
Secretary-Treasurer	Dr. J. T. Cowan
Delegates	Dr. Swanson-Nominating Comm. Dr. Spears
Alternate Delegates	Dr. Lindbloom Dr. Zakahi
Censors	Dr. Swanson, Dr. Fox, Dr. Askwig
District Utilization Committee	Dr. Fox, Dr. Collins, Dr. Cowan

Dr. Brogdon spoke to the society on the Heart, Cancer and Stroke program. Mr. Richard C. Erickson was also present at this meeting.

Respectfully submitted,
A. J. Tieszen, M.D.
Councilor, Fourth District

The Committee considered the report of the Councilor from the Fourth District Medical Society and recommends the acceptance of this report.

REPORT OF THE COUNCILOR FIFTH DISTRICT

The following is the report of the Fifth District, South Dakota State Medical Association. Since the last annual meeting our first quarterly meeting was October 17, 1966, held in the Stag Room at The Inn. This meeting was called to order by Dr. DeGeest, President. The Auxiliary left to meet by themselves elsewhere. There were 14 doctors present. The following were guests of the District Society: Mr. Richard Erickson; Mr. Randy Tuffs; and Dr. and Mrs. Henry Brandt, of Richfield, Minnesota, guests of Dr. DeGeest. There was a motion by Dr. Adams to dispense with the reading of the last minutes. There was no correspondence of significance on the secretary's

desk and there was no old business to be dispensed with. Under new business Dr. Ted Hohm noted the fact that the Utilization Committee member who lived out of town must drive some 35 miles one way to get to the monthly meeting. There was a motion made by Dr. Ted Hohm that the Huron District Medical Society reimburse this member (Dr. Bell) \$20.00 for each meeting, seconded by Dr. Lardinois. There was some discussion following which the motion carried by unanimous vote. Dr. Ted Hohm also brought up the discussion of free vaccination and immunization clinics. This had been suggested to him by a member of the PTA. There was quite a little discussion on this pro and con, and it was noted by Mr. Erickson that the State Health Department was not to push these clinics, but just to push an education campaign to try to educate the general public to have their children and themselves immunized regularly. It was apparent that there was some pressure being brought to bear on various PTA's by the State Health Department and this was deplored. Mr. Erickson said he would contact the proper authorities to rectify this situation. It was the feeling of most of the members that free clinics attract only the people who would come into the office anyway, and the people who really needed it, such as the low income groups, hardly ever showed up for the free clinics. It was suggested that we might have some sort of program whereas an indigent patient could be given a slip which would allow him to come to the office and get a free shot if he so desires rather than to try to push the free clinics where records are not kept properly and nobody knows whether or not a person has had proper immunization. No motion was made on this discussion. Dr. Lardinois mentioned the fact that there had been some discussion in the past about the District buying a projector for use in the various meetings, etc. He had procured this projector on that basis, but nothing had been done about paying for it. The cost of the projector was such that it would completely deplete the Society's treasury so it was suggested by Dr. Adams that the District pay for half and he was sure the American College of Surgeons would pay for the other half. A motion was then put forth by Dr. Ted Hohm that the Huron District pay one-half of the cost of the projector if the American College of Surgeons would pay the other half. This was seconded and passed.

Dr. David Buchanan brought up the question of labeling prescriptions. Some of the various medical organizations have recommended that prescriptions be labeled with the name and strength of the drug contained in the bottle. This is not uniformly done and after some discussion by the membership at large, it was the consensus that labeling of the prescriptions should be at the discretion of the doctor writing the prescription; however, it would be nice if the prescription blanks, themselves, had a little box in the bottom which could be checked as to whether or not it was to be labeled.

Dr. Fred Leigh reported on the Council meeting at the annual meeting. The main points brought out were the problems of the radiologist and pathologist in regard to direct billing, etc. There wasn't too much of a conclusion reached either way. Final directives on this are being handled by the AMA and their Board of Trustees.

Mr. Richard Erickson was then introduced by President DeGeest and talked for a short time. He expressed the regrets of Dr. Brogdon who could not attend because of a death in the family. He congratulated the Huron District for their work in putting on the State meeting in June. He also reported on the increase in employees in Blue Shield because of Medicare. At the present time an average of 225 claims per day are being processed for Medicare. The question was brought up by one of the members as to why two forms were needed. One is for Medicare and one is for O.A.A. when the patient has not yet used up the \$50.00 deductible. This was explained by Mr. Erickson to the satisfaction of all members present. Mr. Erickson then told the group that a 700 square foot addition to the State office in Sioux Falls

is being constructed primarily to accommodate the increased workload added by Medicare, and although Blue Shield has no assurance that they will get the contract for Medicare next year, it was the feeling of Mr. Erickson that this addition could certainly be used in any case. Dr. Paul Hohm expressed the appreciation of the Society and doctors in general to Blue Shield for the way in which they were handling the claims and the way in which they were looking after our interests as opposed to the interests of bureaucrats in Washington. There was a motion to adjourn and this was duly done.

The next Huron District Society meeting was December 29, 1966, at the Stag Room in The Inn. The meeting was called to order by Dr. Lardinois, Vice President, acting in the absence of Dr. DeGeest, President. The Auxiliary remained at the meeting because of the small number of members attending and because of the anticipated shortness of the meeting. There were ten doctors present. The reading of the minutes of the past meeting was voted to be dispensed with. Dr. William Hanson, Secretary-Treasurer, informed the group that Dr. Saxton had given him a copy of an ad placed in the **Daily Plainsman** some weeks ago which attempted to inform the public that multiple sclerosis was a disease which could be treated by chiropractors in the world-famous Spears Hospital at Denver, Colorado. Dr. Saxton had written to the AMA sending a copy of the ad and was advised that AMA had received many of these throughout the country and had brought the matter to the attention of the Colorado Postal Inspector and the Colorado Medical Society. The matter was brought before this District with the idea that something should be done, or at least express protest regarding this type of advertising. It certainly is not only unethical but misleading. There was quite a little discussion and finally the decision of the group was that a letter should be sent to Dr. Goddard, Head of the Federal Drug Administration, and a copy of this sent to the **Daily Plainsman** of Huron, explaining our position on the matter. It was suggested that possibly since Dr. Goddard had been so active in curtailing misleading advertising regarding drugs for M.D.'s that maybe he could see that this matter be taken care of in a similar manner. The motion to send this letter was made by Dr. Charbonneau, seconded by Dr. Bell, and passed by unanimous vote of the membership present. The next matter for consideration was the election of officers for the forthcoming year, 1967.

Dr. David Buchanan nominated Dr. Clifford Lardinois for the position of President. This was seconded by Dr. Hofer. Dr. Hanisch moved that nominations cease and the secretary be instructed to cast a unanimous ballot, seconded by Dr. Hofer, and passed by unanimous vote of the membership present.

It was moved by Dr. Leigh that Dr. Huet be nominated Vice President. This was seconded by Dr. Hanisch, who also moved that nominations cease and the secretary be instructed to cast a unanimous ballot. This was carried by a vote of the membership.

Dr. Roscoe Dean nominated Dr. William Hanson to continue in the office of Secretary-Treasurer. This was seconded by Dr. R. A. Buchanan. Dr. Hanisch moved that nominations cease and the secretary be instructed to cast a unanimous ballot. This again passed by unanimous vote of the membership.

Dr. Hofer nominated Dr. Hanisch, for membership on the Board of Censors for a 3 year term to replace a retiring member. This was duly passed.

Delegates were not voted on. It was re-affirmed that the delegates would be the immediate two past presidents, Dr. David Buchanan and Dr. James DeGeest; the alternate delegates being Dr. Lardinois and Dr. Hanson.

Dr. Leigh talked a little about the last Council meeting which was a report on the study of the

abortion law and decision by the Commission which handles legislation that until there is unanimous agreement by the doctors in the State regarding changes proposed by the Society of Obstetricians and Gynecologists, this matter should be left alone and no vote was made upon it. Also mentioned at the Council meeting was the matter of some of the rules and regulations involving Title 19, one in particular which states that generic names should be used on prescriptions. Dr. Leigh suggested we go on record against the use of generic names. Dr. Bell emphasized this feeling and there was no motion made but it was apparently the consensus of opinion of the membership that compulsory use of the generic name was to be condemned because of the fact that there is no control for the quality of the medication prescribed. The meeting was duly adjourned.

The next meeting of the Huron District Medical Society was February 16, 1967. It was called to order by Dr. Clifford Lardinois, President. There were 14 doctors present. One guest was present, Dr. Preston Brogdon, President of the South Dakota State Medical Association, Mitchell. It was moved by Dr. H. P. Adams, seconded by Dr. E. C. Hanisch, that the reading of the minutes of the previous meeting be dispensed with, and this was so done. Correspondence on the secretary's desk was discussed. First of all, a letter was read from the South Dakota Medical Association, suggesting that we select and recommend a nominee for the State Nominating Committee and send this name to the State office. Dr. Paul Hohm moved that Dr. David Buchanan be named nominee for this committee from our district. This was seconded by Dr. Emil Hofer and passed with unanimous vote of the membership. A letter regarding resolutions and the fact that they should be submitted to the State Office before April 15, was read by the secretary. No action was taken on this letter. A letter was read again from Mr. Richard Erickson of the State Office suggesting that since Dr. Hagin was apparently retiring, possibly we could vote him an honorary life membership and present his name for honorary life membership in the State Association at the annual meeting. This was discussed quite a bit and since nobody knew for sure what the regulations were and whether or not Dr. Hagin was actually retired completely or not, it was moved by Dr. Paul Hohm that the secretary investigate this and if it was found that Dr. Hagin was eligible for honorary membership he should be so re-instated in the Medical Society. Dr. Gryte seconded this and it passed by unanimous vote of the membership. Then a letter from Helena Bultsma, Radiological Technician, was read regarding the South Dakota Society of Radiological Technologists' meeting which is to be held in Huron on April 21, and 22, and asking if the Society could contribute some small amount of money to help them with their convention. It was moved by Dr. Paul Hohm, and seconded by Dr. H. P. Adams that \$25.00 be given to the South Dakota Society of Radiological Technicians for this purpose. This was passed by unanimous vote. Under the heading of old business it was brought up by Dr. Emil Hofer that in the October 17th meeting there was a motion passed which stated that \$20.00 was to be paid to out-of-town members of the District Utilization Committee for each meeting that they attended. He informed us

that if we were to pay this the way it was stated in the previous motion, it would amount to quite a large sum — somewhere in the neighborhood of \$120 to \$200 per year. It was suggested by Dr. Hofer that this resolution be changed in the following context to read that \$20.00 should be paid to any out-of-town member of the District Utilization Committee only if he makes a special trip for the meeting. This was seconded by Dr. E. C. Hanisch and passed with unanimous vote of the membership. All old or new business being taken care of, the speaker for the evening was introduced by Dr. Lardinois. Dr. Preston Brogdon, President of the State Medical Association, gave an informative talk on the various aspects of Title 18 and 19 and how they were being implemented in the State; what things were wrong with them as far as he was concerned; and what problems they were running into in various hospitals. Regarding Title 19, specifically, which is not yet implemented, he suggested that we work diligently to try to set up this program so that the government does not step in and set it up for us. He also suggested that anyone who had any problems with the implementation of Medicare since it has been enacted into law should write to Senator McGovern in answer to the Senator's recent letter. After this talk and a little discussion back and forth between the membership and President Brogdon, it was moved by Dr. Yale Charbonneau and seconded by Dr. Clifford Gryte that the meeting be adjourned. This was duly done.

Our next regular meeting will be in May, before the State Convention to be held in Rapid City, at which time we shall instruct our Councilor and Delegates as to any resolutions or procedures which would be forthcoming at the meeting. Past President, Dr. Paul Hohm, and Councilor, Dr. Fred Leigh, from the Fifth District, plan to attend the April Council meeting at the Ramada Inn in Sioux Falls.

Respectfully submitted,
Fred D. Leigh, M.D.
Councilor, Fifth District

The Committee considered the report of the Councilor from the Fifth District Medical Society and recommends the acceptance of this report.

REPORT OF THE COUNCILOR SIXTH DISTRICT

Three meetings were held during the past year. Dr. Don Mabee, who had been a member of the local society in good standing for nearly forty years, was given an honorary membership in the local society and proposed for honorary membership in the state society. The recognition dinner was held in Dr. Mabee's honor in the summer of 1966 and was well attended.

In the fall meeting Dr. Thomas Petty, an internist, presented a paper on "Chronic Pulmonary Disease and Treatment."

The final meeting was held in January and new officers were elected: President of the district was, Dr. F. D. Gillis; Vice-president, Dr. J. T. Berry; Secretary-Treasurer, Dr. R. G. Gere; Delegates, Dr. R. G. Gere and Dr. J. O. Mabee; Alternates, Dr. V. R. Vonburg and Dr. R. Hockett.

Discussion of a HEADSTART program in relation to the local society was made by Dr. Brogdon, and Dr. Loos, Chamberlain, South Dakota was admitted to membership to the local society.

Dr. William H. Fritz, the retiring president of the Sixth District Society died suddenly the evening of the January meeting after returning home.

Respectfully submitted,
H. R. Lewis, M.D.
Councilor, Sixth District

The Committee has considered the report of the Councilor from the Sixth District Medical Society. The Committee recommends the acceptance of this report.

REPORT OF THE COUNCILOR SEVENTH DISTRICT

The Seventh District Medical Society meets the first Tuesday of the month except during the months of June, July, and August. The monthly meetings are held at the Westward Ho Country Club in Sioux Falls. The Board of Directors meets the night before the monthly meeting and during the summer months on the call of the society president. There are presently 126 active members and 11 life members.

September 5, 1966

Minutes of the Board of Directors meeting September 5, were read and approved. Transfer membership for Noe Authier and Lloyd Wagner were approved. Drs. Daw, Elkjer and Barlow were admitted to full membership after the usual one year probationary period.

Dr. George gave an interesting and informative talk on rabies in the state of South Dakota and its prevalence among wild animals.

Dr. Robert G. England of Carlinville, Illinois, gave a talk on medicare and his experiences to date.

October 4, 1966

The labeling of prescription drugs was discussed and the conclusion was that it be left to the individual physician to ask for or omit naming the drug in the container dispensed by the pharmacist.

Mr. Richard Erickson and Mr. Randy Tuffs gave a very informative discussion on the current aspects of medicare as it affects the physician and the intermediary of Part B. Many questions were asked and answered.

November 1, 1966

Preston Brogdon, M.D., Mitchell, president of the State Society was the honored guest of the society and reviewed the activities of the past several months medically and politically as pertains to the State's doctors. He also discussed the search for a new Dean of the Medical School and went into detail regarding the present status of the Heart, Cancer, and Stroke programs.

December 6, 1966

Dr. Robert Quinn gave a progress report on Title 19 and the various aspects of the program as relates to South Dakota. Election of officers for 1967 was held and the following slate was unanimously elected:

President	J. S. Devick, M.D.
Vice President	Dorence Ensberg, M.D.
Secretary	B. J. Begley, M.D.
Treasurer	Robert Giebink, M.D.

January 3, 1967

Dr. Charles McDonald gave a brief report regarding Medicare.

The information given to the Board of Directors regarding the proposed move of the Vocational Rehabilitation Center from Pierre to Sioux Falls by James Lefler from the department at Pierre and Bernard Gavin from the Sioux Falls office was relayed to the society and it was moved and passed that the department be notified that the proposal had received favorable comment. Some 2000 cases a year are processed and 25% of these need medical consultation and all of them need proper review by a medical board. The move was proposed by the headquarters in Pierre apparently on the basis of manpower shortage.

February 7, 1967

Dr. Gregg reported on a Socio-Economics meeting which he attended recently in Chicago, and commented on the probable effects on the private practice of medicine.

A communication from the A.M.A. regarding the utilization of retired physicians was read to the Society.

The question of ambulance service for the city of Sioux Falls was discussed and the committee was advised to again appear before the city commission and present again the seriousness of the situation and offer to help in any way needed. The preference seemed to be for a police operated service or a privately operated service.

March 7, 1967

This was the combined meeting of the 7th District and the Auxiliary. Dr. Robert Hayes of Winner, recently returned from Viet Nam where he had spent a year in a civilian hospital, spoke after the dinner and showed colored slides taken during his stay in that country. His comments and slides were very enlightening.

April 4, 1967

At this meeting a girl from Italy and a boy from Japan, both exchange students, and high school juniors in Sioux Falls schools gave interesting talks about life in their native lands compared to life in the United States and Sioux Falls in particular. Both spoke English quite well and answered many questions from the audience.

Respectfully submitted,
E. T. Lietzke, M.D.
Councilor, Seventh District

The Committee has considered the report of the Councilor from the Seventh District Medical Society and recommends the acceptance of this report.

REPORT OF THE COUNCILOR EIGHTH DISTRICT

Since the annual meeting of the South Dakota State Medical Association in 1966, the Eighth District Medical Society has held three meetings. One more meeting will be held between the time of this report and before the annual meeting of the South Dakota State Medical Association. The meetings that have been held were on September 29, 1966, at the Black Steer Restaurant in Yankton, South Dakota; on December 15, 1966, at the Yankton State Hospital in Yankton, South Dakota; and on January 25, 1967, at the Prairie Restaurant in Vermillion, South Dakota.

On September 29, 1966, the scientific portion of the meeting was held at 6:00 P.M. Dr. Richard Hahn from the Mayo Clinic Department of Oncology spoke on cancer and chemotherapeutic agents. After the scientific portion of the meeting, the business meeting was presided over by President D. Max Reade, M.D.

Dr. Preston Brogdon, President of the South Dakota State Medical Association, was introduced. Mr. Richard Erickson was with Dr. Brogdon and they both spoke on some of the problems that the state Association office was having with Medicare.

Dr. C. R. Herbrandson and Dr. M. L. Radack were voted into membership of the Eighth District Medical Society. Dr. C. B. McVay had no further report on the cancer, stroke, and heart disease centers. The councilor brought up some matters that were referred from the last Council meeting.

On December 15, 1966, the scientific portion of the meeting was given by Mr. Lee Phillips at the Yankton State Hospital, and the title of the talk was "Dealing with Alcoholism."

Following this interesting talk, the business portion of the meeting was held and presided over by President D. Max Reade, M.D.

Charles R. Turner, M.D., Vermillion, South Dakota, was voted into membership of the Eighth District Medical Society.

The councilor reported on the last Council meeting and asked for nominees from the Eighth District for members who might be eligible to receive the annual awards.

The Nominating Committee for the Eighth District Medical Society for the fiscal year of 1967 nominated the following officers: president, Dagmar Glood, M.D.; vice-president, Alan Domina, M.D.; secretary, Larry Savage, M.D.; treasurer, Morris Radack, M.D. These candidates were all elected by unanimous ballot.

At the January 25, 1967, meeting at the Prairie Restaurant in Vermillion, South Dakota, the scientific portion of the meeting was presented by the MEND program at the University of South Dakota. Colonel Hardaway spoke on "Shock as Related to Viet Nam Battle Casualties."

The business portion of the meeting was then called to order by President Dagmar Glood, M.D. There was a discussion of the anti-vivisection law pending

in the state legislature. After some discussion it was decided by President Glood to have Dr. A. P. Reding on his own volition write Representative Reifel concerning this matter. Further new business consisted of a discussion as to whether or not Yankton should submit its name as a possible city for a forthcoming State Medical Association annual meeting. Dr. D. M. Reade made a motion to have delegates submit the city of Yankton, or the Eighth District Society as the host organization for the State Medical Association annual meeting some four to five years from now. The treasurer's report was read by Dr. M. L. Radack.

At each meeting and following the quarterly councilor meetings I discussed matters that were referred back to the District Medical Associations with the members and the proper and necessary action has been taken.

Respectfully submitted,
Clark Johnson, M.D.
Councilor, Eighth District

The Committee has considered the report of the Councilor from the Eighth District Medical Society and recommends the acceptance of this report.

REPORT OF THE COUNCILOR NINTH DISTRICT

During the year of 1966, the following meetings were held and the outline of the activities, speakers and visitors is as follows:

February 8, 1966 the Black Hills District Medical Society met at the Arrowhead Country Club. There were no outside visitors. The business meeting consisted largely of local matters. The speaker of the evening was Dr. H. Haugan of Rapid City, who presented an X-ray conference.

March 14, 1966 the Black Hills Medical Society met at Ellsworth Air Force Base. The entire group was treated to a tour of missile sites by Col. Reinert, Commanding Officer of the Base Hospital. This proved to be a most interesting and instructive tour. The group then convened for a scientific program which consisted of well presented clinical cases by the Air Force Base medical staff. Following dinner, the Black Hills District business meeting was held. Dr. Church and Mr. Rosevear representing SODAPAC were visitors.

June 7, 1966 the meeting was held at the Veterans Administration Center in Hot Springs, South Dakota. Thomas L. Petty, M.D., Assistant Professor of Medicine at the University of Colorado Medical School presented a most interesting paper on the "Current Concepts of Pulmonary Emphysema."

August 5, 1966 the meeting was held at the Surbeck Center, School of Mines and Technology, Rapid City. Dr. Brogdon, President of the South Dakota Medical Association, was our distinguished visitor and guest speaker. During the business meeting Dr. C. E. Tesar was appointed to fill the term of Councilor for Dr. J. Elston. During the business meeting, Resolution III regarding SODAPAC billings was adopted.

October 18, 1966 the meeting was held at the Arrowhead Country Club in Rapid City. Mr. Richard Erickson, Executive Secretary of the South Dakota Medical Association, was our guest. He discussed preliminary preparations and arrangements for the 1967 annual meeting of the South Dakota Medical Association to be held in Rapid City on June 3 - 6. Dr. Shining of Rapid City presented the scientific portion of the meeting. His topic was "Myoglobulinuria."

December 8, 1966 the meeting was held at the Arrowhead Country Club. The attendance and financial reports of the Black Hills Seminar were given and plans for the 1967 Black Hills Seminar were initiated. Preparations for the annual State meeting were discussed and the local district's responsibilities finalized. The scientific portion of the meeting was presented by the Ayerst Laboratories. Their contribution was an interesting film on Bronchiectasis. Election of officers for the 1967 term was held and the following slate of candidates elected:

Dr. T. Jacobson of Hot Springs, S. D., President
 Dr. J. Hewitt of Rapid City, S. D., Vice President
 Dr. H. Haugan of Rapid City, S. D., Secretary
 Dr. H. Frost of Rapid City, S. D., Censor
 This outlines the highlights of the year's activities.

Respectfully submitted,
 C. E. Tesar, M.D.
 Councilor, Ninth District

The Committee has considered the report of the Councilor from the Ninth District Medical Society and recommends the acceptance of this report.

The Reference Committee suggests that reports of the Councilors remain concise in lieu of recitation of minutes. Only nine reports were submitted, one which was received late. It was noted by the Committee that the reports from the Rosebud District, the Northwest District and the Whetstone Valley District were omitted. The Committee would heartily suggest that such reports be submitted, properly documented, to the State office well in advance of future deadlines.

REPORT OF THE COUNCIL

Three Council meetings have been held in the past year, one in Rapid City, and two meetings in Sioux Falls. The January meeting was scheduled for Huron but was cancelled because of a blizzard and was held in Sioux Falls, later in January.

The meetings were all well attended by various commission chairmen, state society officers, and councilors.

The minutes of the several meetings, including the reports of the various commissions all have been published in the South Dakota Journal of Medicine.

Respectfully submitted,
 E. T. Lietzke, M.D.
 Chairman of the Council

The report of the Chairman of the Council was considered and found satisfactory. The Committee recommends the acceptance of this report.

REPORT OF THE COMMISSION ON COMMUNICATIONS

The Commission on Communications did not hold a formal meeting during the past year.

However, arrangements have been made for a booth sponsored by the State Medical Association to be set up at the State Fair in Huron, this fall. The booth will be manned by physicians from the Commission on Communications. It will be a professionally constructed exhibit from the American Medical Association. We feel this will be a very successful public relations program.

In October of 1966, television slides, radio spots and newspaper publicity was forwarded to the news media in South Dakota concerning Community Health Week. A similar campaign was conducted during Diabetes Week. The radio stations are regularly supplied throughout the year with 20-second spot announcements which they may use on the public service time as they wish.

Respectfully submitted,
 COMMISSION ON COMMUNICATIONS
 C. L. Vogeles, M.D., Chr.
 R. E. VanDemark, M.D.
 R. E. Dean, M.D.
 T. J. Wrage, Jr., M.D.
 C. A. Johnson, M.D.
 Hugo Andre, M.D.
 R. R. Giebink, M.D.
 B. F. King, M.D.
 B. O. Lindbloom, M.D.
 H. J. Grau, M.D.
 L. K. Cowan, M.D.
 H. H. Brauer, M.D.

The Reference Committee has considered the report of the Commission on Communications and recommends the acceptance of this report.

REPORT OF THE COMMISSION ON LIAISON WITH ALLIED ORGANIZATIONS

- (1) Nursing: No business transacted.
- (2) Improvement of Patient Care: The Commission was represented at all meetings on Improvement of the Care of the Patient.
- (3) Medical-Legal: The joint Medical-Legal meeting was held at Rapid City, South Dakota, in the Fall of 1966. It was well represented by both physicians and attorneys. It was felt that this was a very successful and informative meeting.
- (4) Pharmacy: At the present time, there appears to be a good liaison between the South Dakota Pharmaceutical Association and the South Dakota State Medical Association. We have had fewer complaints regarding the fact that unqualified persons were dispensing drugs in the doctors' offices.
- (5) Voluntary Health Agency: No business transacted.
- (6) Dental: No business transacted.
- (7) Religion: No business transacted.

Respectfully submitted,
 COMMISSION ON LIAISON WITH ALLIED ORGANIZATIONS

M. R. Cosand, M.D., Chr.
 C. L. Swanson, M.D.
 David Buchanan, M.D.
 A. W. Spiry, M.D.
 A. J. Tieszen, M.D.
 V. V. Volin, M.D.
 Jerry Walton, M.D.
 R. F. Thompson, M.D.
 Dagfinn Lie, M.D.
 Ted Hohm, M.D.
 D. L. Ensberg, M.D.
 Mary Sanders, M.D.

The Reference Committee has considered the report of the Commission on Liaison with Allied Organizations and recommends the acceptance of this report.

REPORT OF THE COMMISSION ON MEDICAL SERVICE

There have been two formal meetings of the Commission, both held in the office of the Dean, School of Medicine, University of South Dakota; one on October 29, 1966, and the other March 18, 1967. Please refer to Addendums #1 and #2.

Representing this Commission, the following meetings have been attended:

- 1) January, 1967, Chicago, Socio-Economic Problems in Medicine — J. B. Gregg, M.D.
- 2) February, 1967, Chicago, Third Annual Meeting of State Medical Society Committees on Medical Education and Hospitals — J. W. Donahoe, M.D. and G. Knabe, M.D.
- 3) March, 1967, Rural Health Conference, Chapel Hill, N. C. — J. A. Anderson, M.D.
- 4) August, 1966, October, 1966, December, 1966, South Dakota Planning Council for Nursing Resources (meetings in various centers throughout the State) G. Tuohy, M.D., and J. B. Gregg, M.D.
- 5) Planning Committee for the South Dakota Heart, Cancer, Stroke program, several meetings held in various centers throughout the State — Warren Jones, M.D. and J. B. Gregg, M.D.
- 6) Executive Committee meetings of the Heart, Cancer, Stroke Planning Committee, Sioux Falls, February 25, 1967 — Warren Jones, M.D. and J. B. Gregg, M.D.
- 7) Meetings of the Council of the S.D.S.M.A. representing this Commission — J. B. Gregg, M.D.

Matters of business which have come to the attention of the Commission are:

- 1) **Hospital Utilization, Insurance Advisory** — At the April 2, 1967, meeting, it was recommended by the Council that this Commission review the standard insurance claim form developed by the AMA and the Health Insurance Council with the

idea of determining whether this should be adopted officially by the S.D.S.M.A. Dr. H. Russell Brown had recommended to the Council that the insurance form now in use be discontinued; that the S.D.S.M.A. purchase the AMA forms and then sell these to the physicians of the State on a cost plus expenses basis. This matter is now under deliberation by the Commission.

- 2) **Rural Health** — The meeting relating to Rural Health held at Chapel Hill, N. C., attended by Dr. J. A. Anderson was informative but no specific recommendations for this State were forthcoming.
- 3) **Traffic Safety** — R. C. Jahraus, M.D., was appointed to the S. D. Traffic Safety Advisory Board in September, 1966, to replace John Stransky, M.D.
- 4) **South Dakota Planning Council for Nursing Resources** — several meetings have been held in various locations in this state and plans for combatting the problem of shortage of nurses have been made. No definite solution is as yet in sight.
- 5) **Heart-Cancer-Stroke Planning Committee** — Several meetings have been held in various communities in this state. This state has been allied with Nebraska in the development of the planning stage and the Nebraska State Medical Association is now the fiscal agent for funds allotted to the two states. However, South Dakota has its own, separate budget. Dr. R. Hayes of Winner, has been appointed Coordinator for this program for the state and started work as of March 1, 1967. Further information relating to the program will be forthcoming from Dr. Hayes' office which is located in the building of the School of Medicine, University of South Dakota. As Secretary pro-tem of the Planning Committee, the Chairman of this Commission has compiled records of the meetings of the Heart-Cancer-Stroke Planning Committee.
- 6) **Immunization — School Health** — (A) A resolution relating to PKU testing, submitted by E. H. Heinrichs, M.D., was considered by the Commission. It was the sentiment of the Commission that this resolution is commendable but that the method of testing in this situation not be endorsed by the Commission or the S.D.S.M.A. (B) A letter has been sent to each physician in this state, relating to the availability of the Phillips-Roxanne type measles vaccine, available through the Vaccination Aid Program at Pierre. (C) A revision of the recommended immunization schedule for children is now in the process of preparation by the South Dakota Academy of Pediatrics and will be made available to the physicians of South Dakota soon. (D) Communication between this Commission through the office of the Executive Secretary of the S.D.S.M.A. and I. Belzer, M.D., TB Control Officer, State Health Department, Pierre, has been received. This concerned the establishment of free TB control clinics in this State. This matter is now under consideration and no definite report can be made now.
- 7) **Comprehensive Health Planning** — This matter was discussed by the Commission and it was recommended that the Executive Secretary of the S.D.S.M.A. write to the South Dakota State Health Department to request information as to the plans for this state. In a reply to Mr. Erickson, Dr. G. J. Van Heuvelen replied, "With reference to the status of comprehensive health planning, Governor Boe has designated the State Planning Commission as the official agency for South Dakota. He has also indicated unofficially that the State Department of Health would be designated to actually do the administering with the cooperation of such other State agencies as Welfare and Education which are also represented on the Commission." **It is notable that the S.D.S.M.A. has not been officially contacted in regard to this matter and has not been asked to attend any of the planning meetings for compre-**

hensive health planning in this State. It was the recommendation of this Commission to the Council that an ad hoc committee on comprehensive health planning, similar to that on Title 19 be appointed to become familiar with this subject. At its April, 1967, meeting, the Council appointed Drs. R. H. Hayes, G. Robert Bartron, and Fred Leigh, to this ad hoc committee.

- 8) **Board of Medical Examiners** — Communications have been received from the S. D. Board of Medical Examiners relative to possible changes in the requirements which might act as a stimulus to physicians to come to this state to practice. No definite action has been taken in this matter.
- 9) **Scholarships to Medical Students** — At the recommendation of this Commission, the Council at its January 22, 1967, meeting authorized the following scholarships: 1) Two (2) \$100.00 scholarships for a Freshman and a Sophomore; 2) a \$450.00 tuition scholarship for an incoming Freshman; 3) \$200.00 for travel expenses for the delegate to SAMA.
- 10) **Medical School Affairs** — Please refer to Addendums 1 and 2. (A) After the resignation of Dean Walter Hard, the members of this Commission and through them the physicians in their areas, were polled as to the sentiments of this state relating to the Dean of the School of Medicine. This poll indicated that the physicians favored a physician (M.D.) as the new Dean. Specific suggestions as to possible replacements for Dean Hard produced a number of different candidates. Subsequently a committee has been appointed by the President of USD to search for, interview, evaluate and make recommendation of an individual for the Deanship. As of the last meeting of this Commission, March 18, 1967, there was no definite information relating to the subject which could be released to this Commission. (B) It was the feeling of the acting Dean of the School of Medicine, that there should be much closer liaison between the SDSMA and the School of Medicine, through the Medical School Affairs Committee, which is a function of the Commission on Medical Service. It was the feeling of the members of the Commission that this is an excellent recommendation but that until the new Dean has been picked and established in office, it will not be possible to decide much definitively from the standpoint of this Commission. (C) It was the suggestion of the Commission that the School of Medicine might better utilize the services of the Clinical Teaching Faculty, on the various committees of the Medical School. In the past there has been very little representation on the Medical School Committees by the Clinical faculty. This is an area where relationships between the basic science faculty and the clinical faculty as well as the practicing physicians of the State can be enhanced. (D) Despite strong recommendations from members of the SDSMA and others to the Governor of South Dakota, R. F. Hubner, M.D., whose term on the State Board of Regents expired this year, was replaced by another individual. There is now no physician on the Board of Regents. (E) This Commission has been charged with the responsibility of determining and reporting to the SDSMA regarding the development of medical education in this state. On many occasions in the past, the subject of establishing a four year medical school in this state has been raised. A copy of the HEALTH MANPOWER FOR THE UPPER MIDWEST (A Study of the Needs for Physicians and Dentists in Minnesota, North Dakota, South Dakota, and Montana) sponsored by the Hill Family Foundation, and other pertinent data has been obtained and made available for study to members of this Commission. The Commission met with the President of the University of South Dakota, to obtain his views on the development of the Medical School at SDU. It was the opinion of the Commission, as

reported to the Council of the SDSMA, "This Commission recommends that the SDSMA take due and careful notice of the plans of President Edward Q. Moulton, University of South Dakota, in regard to the development of higher education in this state with special reference to his thoughts in regard to the development of the Medical School and most especially those which pertain to the recruitment of teaching personnel by making salaries and other fringe benefits more attractive and competitive with other institutions of higher learning."

All factors being considered carefully, it is becoming increasingly more apparent that the state of South Dakota is fast approaching a crossroad insofar as medical education is concerned. The rapid change in curriculum in various medical schools, to which graduates of the USD Medical School have gone in the past, has produced problems of coordination of the teaching program at USD with other institutions. Further changes in the immediate future will make more difficult the problems of providing the necessary background education so that South Dakota students meet the requirements of other institutions. The importance of Medical Schools in the Heart-Cancer-Stroke programs and in the Comprehensive Health Planning Program will focus closer attention upon the Medical School. All these factors being considered it becomes painfully apparent that South Dakota will soon have to face the fact that some change in the Medical Education program of this state will have to be made or it will become a satellite to one of the larger neighboring states.

The Commission on Medical Service Recommends the following to the South Dakota State Medical Association:

- 1) The SDSMA should take due and very careful notice of the plans of President Edward Q. Moulton, University of South Dakota, relating to the advancement of higher education in this state, with special reference to his thoughts in regard to the ultimate development of a four year medical school. This should be coupled with close attention to the activation of the Heart-Cancer-Stroke and other similar programs which are medical school oriented. Ultimately the SDSMA must adopt a definite stand in regard to its position on the subject of a four year medical school in this state.
- 2) The SDSMA should investigate and study the community medical center program now being developed in Oklahoma, to determine whether any of the program may be applicable to the state of South Dakota.
- 3) The SDSMA should adopt the revised communicable disease immunization schedule as soon as it is made available to the Association by the South Dakota Chapter, American Academy of Pediatrics.

Respectfully submitted,
COMMISSION ON MEDICAL SERVICE

J. B. Gregg, M.D., Chr.
G. E. Tracy, M.D.
Harold Adams, M.D.
Robert Stiehl, M.D.
T. H. Willcockson, M.D.
L. H. Amundson, M.D.
Warren Jones, M.D.
Donald Weatherill, M.D.
F. R. Williams, M.D.
R. C. Jahraus, M.D.
A. M. Semones, M.D.
J. A. Anderson, M.D.

The Reference Committee considered the report of the Commission on Medical Service and makes the following recommendations:

1. Hospital Utilization — The Reference Committee recommends the acceptance of this portion of the report.

2. Rural Health — The Reference Committee recommends the acceptance of this portion of the report.
3. Traffic Safety—The Reference Committee recommends the acceptance of this portion of the report.
4. South Dakota Planning Council for Nursing Resources — The Reference Committee recommends the acceptance of this portion of the report.
5. Heart-Cancer-Stroke Planning Committee — The Reference Committee recommends the acceptance of this portion of the report.
6. Immunization — School Health — The Reference Committee recommends that the House of Delegates take the necessary action to implement Recommendation #3, as set forth by the Commission on Medical Service as pertains to this portion of the report.
7. Comprehensive Health Planning — The Reference Committee recommends that the House of Delegates urge the Ad Hoc Committee on Comprehensive Health Planning to pursue its studies of the Comprehensive Health Plans of the state and report as soon as possible its findings and recommendations to the Council.
8. Board of Medical Examiners — The Reference Committee recommends the acceptance of this portion of the report.
9. Scholarships for Medical Students — The Reference Committee recommends acceptance of this portion of the report.
10. Medical School Affairs — The Reference Committee recommends that the Medical School Affairs Committee be instructed to consult with the President of the University of South Dakota to embark upon an active study of the feasibility of future medical school development in South Dakota.

Recommendation #2 of the Commission on Medical Service — the Committee recommends the acceptance of this portion of the report.

ADDENDUM #1

Minutes of the meeting of the Commission on Medical Service of the South Dakota State Medical Association in the office of the Dean, School of Medicine, University of South Dakota, Vermillion, South Dakota, on October 29, 1966. Commission members present were Drs. Adams, Anderson, Amundson, Jahraus, Jones, Tracy, Willcockson, and Gregg. Also present were President Edward C. Moulton, Drs. Brogdon, Knabe, and Lietzke, and Mr. Richard C. Erickson.

The meeting convened at 12:45 P.M. The primary purpose of the meeting was to give the Medical School Affairs Committee which is a function of the Commission on Medical Service the opportunity to meet President Moulton, to discuss with him his ideas for the future development of the Medical School and to offer to him the services of this commission and ultimately the parent organization, the South Dakota State Medical Association.

President Moulton reported that he hopefully envisions the ultimate development of a four year medical school for this state. A sum of money has been placed in the future budget of the University for this purpose. President Moulton feels that there should be appointed a study committee to delve into this matter and consider it from all angles and then report its feasibility.

The subject of the development of a two year dental school for the State of South Dakota, the reasons for its need, in conjunction with the presently available facilities of the Medical School and those to be developed in the future was also discussed. It was also announced that there had recently been started a dental technician training program at the Medical School at the University of South Dakota.

President Moulton envisions an improvement in the salary scale of the University of South Dakota, throughout the entire University in an effort to help develop and keep the teaching personnel in the University. A means to provide health-accident-life insurance program as a "fringe benefit" and plans to improve retirement benefits were also discussed.

(Continued on Page 45)

(Continued from Page 38)

In conclusion President Moulton stressed the need for cooperation between the State Medical Association and the Medical School in the development of the various programs to come.

The following matters of business were considered by the Commission: (1) The resolution regarding PKU testing, submitted by Dr. Heinrichs of Watertown was discussed. Dr. Gerald Tracy brought with him a copy of the article on this subject which Dr. Heinrichs has prepared for the Journal of the South Dakota State Medical Association. It was the feeling of the Commission that Dr. Heinrichs should be commended for his efforts to keep the physicians of this state acquainted with the current thinking regarding this subject. However, it was the consensus of the Commission that where there are several methods of testing for this situation and the ideas presented being those of an individual physician, the Commission should not endorse the article or the individual physician. (2) Dr. Gerald Tuohy of Sioux Falls had attended a meeting of the planning organization of the South Dakota State Nursing Association in Sioux Falls on October 26, 1966. He reported that plans are now being developed to enhance the nursing situation in South Dakota. A formal report will be submitted later. (3) Dr. Jones gave a brief report concerning the development of the Cancer-Heart-Stroke Program for the State of South Dakota. The South Dakota organization will be centered around the Medical School and has voted to join with the State of Nebraska and possibly the State of North Dakota in this program. Dr. Jones is a member of the planning organization by virtue of his position in the Medical School. A representative of this Commission will be seated with the planning organization. Recently the chairman of the Commission has represented the commission at several meetings of this organization. If any other member of the Commission would like to sit in on these planning activities, the chairman of the Commission will be glad to step aside and allow him to do so.

(4) The Manpower survey for this area which has been sent to each member of this Commission was not discussed other than briefly because much of the material therein has been covered in the discussion with President Moulton.

(5) It was announced that there will be a meeting of the Rural Health Committee of the A.M.A. in North Carolina in mid-March, 1967. Dr. J. A. Anderson has volunteered to attend this meeting.

(6) Drs. Knabe and Jones discussed the affairs of the Medical School. They reported there is harmony and close cooperation in the Medical School. Dr. Knabe reported that in its present concept he has withdrawn his name from the list of potential candidates for the position of Dean. It is his feeling that as things now stand the position of Dean of the Medical School entails disproportionately large amounts of administrative work and not enough time for matters pertaining to academic and practical medicine. He will prepare suitable recommendations with his concepts as to how the Deanship can be made more attractive to a potential candidate. It was reported that several other candidates for the position of Dean are being interviewed by the search committee.

Dr. Jones reported that there has recently been some shortage of material in the dog laboratory. Dr. Jones had contacted Senator Bartron regarding the introduction of legislation to correct this matter. No reply from Dr. Bartron had been received as of this date. It was suggested to Dr. Jones that this matter might wisely be deferred for the present because of the anti-vivisectionists on a national level.

(7) Dr. Tracy discussed the development of a uniform physical examination blank for all of the institutions of higher learning in South Dakota. He noted that the form now in use at the University of South Dakota has met with almost universal acceptance throughout the state. Because of changes in policy regarding immunization of children by the American Academy of Pediatrics, it will be necessary

to update the recommendation of the State Medical Association to the physicians of South Dakota soon. Dr. Tracy will make arrangements for this notification to be sent to the physicians of this state.

There being no further business, the meeting was adjourned with the provision that minutes of the meeting would be compiled by the Chairman of the Commission and mailed to each Commissioner.

J. B. Gregg, M.D., Chairman

ADDENDUM #2

Meeting of the Commission on Medical Service, held on March 18, at the Medical School, University of South Dakota, Vermillion, South Dakota. The meeting convened at 1:00 P.M. The members present for roll call included J. B. Gregg, M.D.; H. P. Adams, M.D.; T. H. Willcockson, M.D.; G. E. Tracy, M.D.; and Warren Jones, M.D. Also in attendance were P. P. Brogdon, M.D.; R. H. Hayes, M.D.; George Knabe, Jr., M.D.; E. T. Lietzke, M.D.; and Mr. Richard Erickson.

A discussion of the state immunization was held. Dr. Tracy reported on the Health Department's program and in particular discussed the measles vaccine program. He also discussed the suggested schedule of immunizations which was published by the Medical Association two years ago and indicated that it will probably be necessary to update this schedule in the very near future. This will be done by the South Dakota Pediatric Society and the information forwarded to the physicians of South Dakota. A motion was made by Dr. Tracy, seconded and passed, that the Council be requested to take a definite stand on encouraging measles immunization clinics, at the district level.

Dr. J. A. Anderson has just returned from the Rural Health Conference; however he was not able to attend the meeting and therefore the executive secretary was asked to contact Dr. Anderson to report on the conference. This report should be made prior to the Council meeting so that Dr. Gregg might include it in his report to the Council.

The meeting concerning Socio-Economics in Medicine, sponsored by the AMA was discussed. Drs. Gregg and Brogdon attended the conference in Chicago and indicated that this area of medicine is becoming of vital importance to the physicians. Mr. Erickson was asked to include an item in the Grab Bag pointing out the article on this subject published in the March 13th issue of Modern Medicine. Next followed a discussion of the reports from Drs. Knabe and J. W. Donahoe concerning the conference on Medical Education which was held in Chicago recently. It was pointed out that South Dakota physicians will have to become increasingly aware of the necessity for continuing re-education through various programs and re-evaluation of the quality of service given by practicing physicians by the State Medical Boards.

Comprehensive health planning was discussed at some length by the committee. It was the feeling of the group that perhaps the Council should appoint a three man ad hoc committee on comprehensive planning to act in the same capacity as the ad hoc committee on Title 19. It was requested that Mr. Erickson write to Dr. Van Heuvelen on the recent conference held in Pierre, on comprehensive planning and to report to Dr. Gregg any information received from Dr. Van Heuvelen.

Dr. Robert Hayes was introduced to the group as the Program Director for Heart, Cancer and Stroke and Dr. Hayes discussed the program as he sees it at the present time. He also discussed the possibility of Heart, Cancer and Stroke being tied in with comprehensive health planning and also into the area of medical education. A discussion was held on the possibility of the four year medical school utilizing a new concept in medical training. This would be that students would complete their first two years of medicine at the school in Vermillion and then work with instructors in clinical practice for the last two years of their education.

The subject of the tuberculosis control in the State of South Dakota, under the direction of Dr. Belzer was stated briefly. There was nothing new to report.

An inquiry directed to Drs. Brogdon and Jones regarding the developments in the selection of the Dean for the School of Medicine at the University of South Dakota, revealed that there still has been no definite decision in this matter.

Dr. Knabe spoke briefly concerning the liaison between the Medical School and the Medical Association through the Medical School Affairs Committee. It was the feeling that until the new Dean for the Medical School has been picked and established in office, it will not be possible to decide much from the standpoint of this committee and therefore definite action in this matter will have to await the arrival of the new Dean. After the Dean has been selected, it will be possible to establish some policy for meetings with the Commission on Medical Service which is the Medical School Affairs Committee.

Information was sought from Dr. Knabe as to whether the Medical School is utilizing the services of the Clinical teaching Staff of the Medical School on the various committees of the Medical School. As of this date, there has been very little representation on the Medical School committees by members of the Clinical Faculty. This is one area where the Medical School can improve its relationship with the practicing physicians of this State.

Prior to the meeting of the Commission on Medical Service, the meeting of the Medical School Endowment Fund Board was attended by a quorum and J. B. Gregg, M.D. It was moved, seconded and passed unanimously by this Board that "the Endowment Association make available up to \$5,000 to the University Medical School to be used in the 9 to 1 federal matching program starting in fiscal year 1968, for the perpetuating student loan program. Said school will make an accounting to the Endowment Association for disposition of these funds."

J. B. Gregg, M.D., Chairman
Commission on Medical Service

REPORT OF THE COMMISSION ON INTERNAL AFFAIRS

The entire Commission on Internal Affairs had no regular meeting this year as there was but one resolution submitted to the Commission this year. This was a resolution from the Pierre District Medical Society which felt that the State Medical Association headquarters should be located at Pierre, South Dakota, where State and Federal Health Agencies are located, thereby facilitating the coordination of these agencies. This resolution was sent to the twelve members of the Commission, and ten of them replied saying that they were opposed to the resolution.

BENEVOLENT FUND FINANCIAL REPORT March 1, 1966 - March 1, 1967

Balance in Bank March 1, 1966 \$5,903.78

INCOME

Interest	\$ 379.46	
Donations	757.00	
Loan Repay.	\$1,480.00	
TOTAL INCOME	\$2,616.46	2,616.46
		\$8,520.24

EXPENDITURES

One Loan	\$400.00	400.00
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Balance in Bank March 1, 1967 \$8,120.24

Assets of this Fund are as follows:

Government Bonds	\$ 3,000.00
Loans to students	6,470.00
Cash in Bank	8,120.24

Total Assets \$17,590.24

Obituary Record Report

R. A. Standard, M.D., Aberdeen, died in June, 1966
William Duncan, M.D., Webster, died in June, 1966
B. C. Murdy, M.D., Aberdeen, died in June, 1966
W. H. Fritz, M.D., Mitchell, died in January, 1967

BUDGET COMMITTEE REPORT

The Budget Committee met at the Association office on December 14, 1966, and approved the following budget for the year 1967-68.

South Dakota State Medical Association INCOME

ITEM	Budgeted 1966-67	Proposed 1967-68
State Dues	\$47,500.00	\$48,000.00
Annual Meeting	9,000.00	9,000.00
Interest	400.00	400.00
Refunds & Misc.	1,000.00	1,000.00
Car Reimburse.	1,080.00	1,140.00
	\$58,980.00	\$59,540.00

EXPENDITURES

ITEM	Budgeted 1966-67	Proposed 1967-68
Salary, Exec. Sec.	\$ 6,600.00	\$ 6,600.00
Salary, Other	10,500.00	11,100.00
Social Security	700.00	600.00
Legal & Audit	1,200.00	2,600.00
Tele. & Telegraph	1,800.00	2,000.00
Office Supp. & Equip.	2,500.00	2,200.00
Dues and Subscriptions	1,500.00	1,400.00
Physicians Travel	4,500.00	4,300.00
Annual Meeting	8,000.00	8,500.00
Public Relations	3,500.00	3,000.00
Rent	3,000.00	3,000.00
Miscellaneous	100.00	100.00
Postage	2,200.00	2,200.00
Legis. Expense	2,200.00	1,000.00
Benevolent Fund	400.00	400.00
Medical School End.	200.00	200.00
Ladies Auxiliary	800.00	800.00
Car Expense	1,100.00	2,100.00
Clinical Path.	800.00	600.00
Staff Travel	4,500.00	4,500.00
Insurance	100.00	100.00
Employment Tax	25.00	100.00
Employee Relations	1,600.00	1,600.00
	\$57,825.00	\$59,000.00
Reserve	1,155.00	540.00
	\$58,980.00	\$59,540.00

JOURNAL INCOME

ITEM	Budgeted 1966-67	Proposed 1967-68
Advertising	\$18,000.00	\$18,500.00
Subscriptions	1,200.00	1,200.00
Miscellaneous	600.00	600.00
Refunds	500.00	800.00
	\$20,300.00	\$21,100.00

JOURNAL EXPENSES

ITEM	Budgeted 1966-67	Proposed 1967-68
Salary, Editor	\$ 720.00	\$ 720.00
Salary, Staff	2,400.00	2,400.00
Legal & Audit	50.00	50.00
Rent	300.00	300.00
Tele. & Telegraph	175.00	250.00
Social Security	100.00	110.00
Office Supplies	16,255.00	16,870.00
Postage	200.00	300.00
Travel	100.00	100.00
	\$20,300.00	\$21,100.00

GROUP LIFE—INCOME

ITEM	Budgeted 1966-67	Proposed 1967-68
Premiums	\$30,000.00	\$28,000.00

GROUP LIFE—EXPENSES		
ITEM	Budgeted 1966-67	Proposed 1967-68
Postage	50.00	50.00
Payment to Insurance Company	\$29,100.00	\$27,300.00
Legal & Audit	50.00	50.00
Supplies	50.00	50.00
Balance to Surplus	750.00	550.00
	\$30,000.00	\$28,000.00

BUILDING FUND—INCOME		
ITEM	Budgeted 1966-67	Proposed 1967-68
Blue Shield Rent	\$ 5,100.00	\$15,996.00
Association Rent	3,000.00	3,000.00
Journal Rent	300.00	300.00
Bd. of Exam. Rent	600.00	600.00
Nurses Assoc. Rent	1,080.00	
OAA Rent	2,400.00	
	\$12,480.00	\$19,896.00

BUILDING FUND—EXPENSES		
ITEM	Budgeted 1966-67	Proposed 1967-68
Janitor & Repair	\$ 2,300.00	\$ 3,700.00
Utilities	1,800.00	3,000.00
Interest	2,600.00	3,396.00
Repayment of Loans	2,780.00	5,300.00
Legal & Audit	1,000.00	1,000.00
Taxes & Insurance	2,000.00	3,500.00
	\$12,480.00	\$19,896.00

Respectfully submitted,
COMMISSION ON INTERNAL
AFFAIRS
D. L. Scheller, M.D., Chr.
Howard Saylor, M.D.
A. P. Reding, M.D.
Richard Hockett, M.D.
George Angelos, M.D.
B. J. Begley, M.D.
B. T. Lenz, M.D.
C. L. Behrens, M.D.
H. J. Stensrud, M.D.
Saul Friefeld, M.D.
William Hanson, M.D.
C. Rodney Stoltz, M.D.

The Reference Committee considered the report of the Commission on Internal Affairs and recommends the acceptance of this report.

REPORT OF THE COMMISSION ON LEGISLATION AND GOVERNMENTAL RELATIONS

The 1966-67 Commission on Legislation and Governmental Relations consisted of the following South Dakota physicians: R. H. Quinn, M.D., Chairman; W. T. Sweeney, M.D.; Russell Orr, M.D.; James Reagan, M.D.; C. E. Tesar, M.D.; R. W. Honke, M.D.; R. J. Foley, M.D.; R. J. Bareis, M.D.; C. F. Binder, M.D.; H. R. Wold, M.D.; G. R. Bartron, M.D.; Bill Church, M.D. The Commission on Legislation and Governmental Relations met at the executive office of the South Dakota State Medical Association at 711 North Lake, Sioux Falls, South Dakota, on October 1, 1966. All of the forthcoming legislation dealing with health matters that had been proposed or stood the possibility of being proposed for the 1967 South Dakota State Legislature were discussed. Plans were made to handle each individual problem that was known to us at that date. The plans for a Commission meeting were established to be held during the legislative session in Pierre. The prospects and problems of the implementation of Title XIX of the Medicare Act were discussed.

As a representative of the Commission, R. H. Quinn, M.D. attended the fall meeting of the Welfare Commission along with the officers of the Medical Association. Compromises on Title XIX were discussed at this meeting. Several other conferences with State government officials were held following this meeting.

Following the close of the 1967 South Dakota State Legislature, the following report was submitted to the South Dakota State Medical Association Council: More bills appeared before the 1967 legislature than expected in regards to health problems. A bill requiring all motorcycle operators and passengers to wear protective head gear passed. A pharmacy licensing bill passed with the amendments suggested by the Medical Association. The bill providing authorization for cities and counties to provide ambulance service was passed. Reporting of gun shot wounds was passed. House Bill #613 to establish a Medicare Analysis Corporation was killed. Senator Bartron's bill for financial assistance (Matching funds) totaling \$460,000 passed both houses. This was vetoed by the Governor and then was passed over his veto. Senate Bill #145 to license hearing aid dealers was killed in committee. Bill #219 amending the podiatry law passed with the amendment proposed by the Medical Association.

Representative E. Y. Berry is proposing national legislation to control Medicare Title XIX. His proposals are good for the State of South Dakota. The proposals that he introduced would allow the State more leeway and more time in implementing Title XIX without national governmental penalties. (H.R. 5710).

A luncheon for the legislators in Pierre was held by the South Dakota State Medical Association.

Dr. R. J. Foley of our commission attended the emergency health service committee in Sioux Falls, on February 7, 1967. This meeting was held to plan a seminar to be held in the spring of 1967 on disaster planning. This meeting will be held on April 13, 1967, and Dr. Foley plans to attend this meeting. He is also attending the AMA Emergency Medical Services Conference in Chicago, this spring.

The planned informal meeting of the commission to be held in February at Pierre, was cancelled due to inclement weather. A meeting of the commission will be held at the time of the annual meeting in Rapid City.

The Commission had been charged with the problem concerning regulating the use of animals for the diagnosis and treatment of disease. This problem was solved with the help of the Executive Secretary, his staff, and the legal staff of the South Dakota Medical Association. In 1951, a law (SD 159) was passed covering this matter. This law was deemed to be satisfactory by all parties interested.

R. J. Foley, M.D. was appointed as a representative of the commission to the heart, cancer and stroke committee for the State of South Dakota.

Continued surveillance of national legislation which concerns the medical profession has been carried out.

Respectfully submitted,
COMMISSION ON LEGISLATION AND
GOVERNMENTAL RELATIONS
R. H. Quinn, M.D., Chairman

The Reference Committee considered the report of the Commission on Legislation and Governmental Relations and recommends the acceptance of this report.

REPORT OF THE COMMISSION ON SCIENTIFIC MEDICINE

Meetings were held October 1, 1966 and April 8, 1967, at the Executive Office of the Medical Association.

1. **Tuberculosis Program:** Efforts continue in an attempt to establish a satisfactory working relationship with the State Health Department. Discussions have been held with Dr. Irvin S. Belzer, USPHS Tuberculosis Control Officer and Mr. John R. Mullen, USPHS Field Officer for the program. The Commission continues to press for action on its original recommendations for implementation of the program and on the establishment of a realistic fee schedule for the care of tuberculosis patients. Inquiries are also being made into the justification for sending these patients to out-of-state institutions and about the type

of care they receive there. The Commission urges that there be maximum utilization and development of facilities for care of tuberculosis patients within South Dakota.

2. Mental Health and Mental Retardation: A state commission was established to direct planning in this area. There are no major developments to report with respect to the previously proposed community mental health and retardation centers and other related programs.

3. Diabetes: The Commission has collected information about procedures used in conducting detection drives in the various districts during the annual November Diabetes Week. It has been determined that such drives are best initiated and carried out at the local level with SDSMA providing consultation and support, mainly in the form of publicity, where requested.

4. Aging: On October 10, 1965, the Council approved the Commission's recommendation that the Governor be asked to appoint an advisory committee on aging to assist in administering programs of the Older Americans Act. At the Governor's invitation, a list of proposed members for such a committee was submitted in early 1966. No action on this has yet been taken.

5. Heart, Cancer & Stroke Program: Inasmuch as the Commission has responsibilities in these disease areas, there has been continuing consultation with those persons involved in development of the Regional Medical Center Program. The functions of the steering committee established as a result of the 1964 Second National Conference on Cardiovascular Diseases will undoubtedly be assumed by the H-C-S Program of which Dr. Robert H. Hayes is now Coordinator.

6. Clinical Pathology: SDSMA co-sponsored a post-graduate program at the School of Medicine on Bacteriological Technique for the Small Laboratory on August 26, 27, 1966, as well as the Annual Clinical Pathology Workshops on May 18, 19, 1967. These educational programs have been well attended and received and are an important service in improving the quality of laboratory practice in the State.

7. Annual Meeting: The scientific sessions will be held June 5, 6, 1967, at the Surbeck Center of the South Dakota School of Mines and will follow the format of the 1966 meeting with general sessions on Monday and Tuesday mornings, specialty sessions Monday afternoon and pre-registered workshops on clinical topics on Tuesday afternoon.

Respectfully submitted,
COMMISSION ON SCIENTIFIC
MEDICINE

G. W. Knabe, Jr., M.D., Chr.
Bruce Lushbough, M.D.
Robert S. Jones, M.D.
S. W. Fox, M.D.
Robert Nelson, M.D.
A. C. Vogele, M.D.
R. B. Leander, M.D.
E. H. Heinrichs, M.D.
Clark Johnson, M.D.
Noel deDianous, M.D.
Judson O. Mabee, M.D.
Robert K. Johnson, M.D.

The Reference Committee considered the report of the Commission on Scientific Medicine and recommends the acceptance of this report.

REPORT OF THE STATE UTILIZATION AND INSURANCE REVIEW COMMITTEE

Fortunately, this committee has functioned through the year largely as an insurance review committee. The hospital utilization committees set up throughout the State have functioned in such an exemplary manner for the most part, that there has been no necessity for the state committee to spend a great deal of time in concerning itself about hospital utilization. The profession is to be commended for the forthright manner in which it has sought to make a not-altogether welcome Medicare program function smoothly.

In the matter of insurance review, there has been a pleasantly small proportion of claims against the insurance carrier which it was felt deserved review by the committee. These few disputed claims have been assessed by your individual committee members and the consensus has been submitted for acceptance by the physician. To date, no serious disagreement has been encountered. Perhaps the most frequent cause of misunderstanding between the physician and the insurance carrier has been due to the physician's NOT properly coding his services according to the listings in the RELATIVE VALUE STUDY. Where services, particularly surgical procedures, are described exactly as listed in the Relative Value Study, there is very little chance for misunderstanding or error.

Respectfully submitted,
STATE UTILIZATION AND INSURANCE
REVIEW COMMITTEE
Howard R. Wold, M.D., Chr.
E. W. Sanderson, M.D.
E. S. Palmerton, M.D.
H. R. Lewis, M.D.
Roscoe Dean, M.D.
W. R. Taylor, M.D.

The Reference Committee considered the report of the State Utilization and Insurance Review Committee. The Reference Committee recommends the acceptance of this report.

REPORT OF THE GRIEVANCE COMMITTEE

The Grievance Committee met once during the past year.

The Committee received a grievance against a physician alleging that a confidential communication regarding a patient had been revealed to that patient. Correspondence between the individuals concerned resulted in the misunderstanding being resolved and no further action was taken by the Committee.

Two letters have been received concerning the procedure to be followed in filing a grievance. These letters were answered, but written complaints were not received by the Committee.

Respectfully submitted,
GRIEVANCE COMMITTEE
Magni Davidson, M.D., Chr.
C. J. McDonald, M.D.
C. Rodney Stoltz, M.D.
Paul Hohm, M.D.
R. H. Hayes, M.D.

The Reference Committee considered the report of the Grievance Committee. The Reference Committee recommends the acceptance of this report.

MINUTES OF SOUTH DAKOTA MEDICAL SERVICE, INC. BOARD OF DIRECTORS MEETING Sheraton-Johnson Hotel Rapid City, South Dakota June 4, 1967

The meeting was called to order by H. Russell Brown, M.D., President, at 10:30 a.m.

Those present for roll call were:

H. Russell Brown, M.D.
John Elston, M.D.
C. J. McDonald, M.D.
P. H. Hohm, M.D.
T. H. Sattler, M.D.
E. A. Johnson, M.D.
B. F. King, M.D.
James Gormley
G. L. Hill
Jesse Olson

Also present at the meeting were:

Richard C. Erickson, Executive-Director,
Randall Tuffs, Assistant Director,
Robert Green, Office Manager,
Robert Johnson, Staff Member,
John H. Zimmer, Attorney

Absent and not voting:

D. H. Breit, M.D.

A quorum was declared present for the purpose of transacting the business of the Corporation.

Dr. Hohm moved that the Minutes of the last South Dakota Medical Service, Inc., Directors Meeting be

approved as filed and the reading thereof be waived, such Minutes having been provided to all members in writing prior to the meeting. The motion was seconded by Mr. Olson. Dr. Brown, President, called for a vote thereon and upon roll call vote, the same was passed unanimously.

Dr. Brown, President, called for consideration of the annual Blue Shield Financial Report. The same was reviewed by Mr. Erickson. He advised that no graph was sent to the directors because one had been prepared and submitted in March at the time allocated therefor. The April Financial Report was also presented to the Board and discussed.

Dr. Elston moved that the April report as presented be accepted. The motion was seconded by Mr. Hill. On roll call vote the same was approved unanimously.

Dr. Brown, President, then called for discussion of the "Full Payment Contract," first considering the Addendums mailed to the directors for consideration at this meeting.

After due consideration of the Addendum relative to the wording to be used in the Contract under Section II, Paragraph 4, defining "Family Contract," Dr. Johnson moved that the wording set forth in the Addendum be set forth therein with the exception that the wording "under twenty-three years of age" be inserted in line 5 and deleted from lines 7 and 8. The motion was seconded by Dr. Elston and upon roll call vote the same was adopted unanimously.

Mr. Gormley discussed the wording of Section II, Paragraph 4, as adopted, on the interpretation of disabled children as to the coverage requirement "and live in the household." The specifically referred to disabled dependent children who are attending private schools at the expense of the parents covered by a family "Full Payment Contract." The Board indicated its desire that such children be included in the coverage provided. Mr. Gormley moved that the Staff be directed to interpret "and live in the household" as provided under the definition "Family Contract" as including those totally and permanently disabled step-children and foster children in private schools and institutions receiving full support from such parent or parents. The motion was seconded by Dr. Elston and upon roll call vote the same was adopted unanimously.

Dr. Brown, President, called for consideration of the Addendum relative to "Exclusions" under Section III, Article C, Paragraph 7, Subsection (a). Mr. Erickson and Mr. Zimmer discussed the request of the Commissioner relative to conformity of provisions between Blue Shield and Blue Cross Contracts. The wording proposed in such Addendum would conform the Blue Shield Full Payment Contract to the companion policy to be marketed by Blue Cross in South Dakota. Dr. Sattler moved that the wording set forth in such Addendum, which wording eliminates from the original proposed wording the word "known" and conforms the Blue Shield contract to Blue Cross wording be adopted. The motion was seconded by Mr. Olson, and on roll call vote the same was unanimously adopted.

Dr. Brown, President, then discussed the Addendum relative to adding a paragraph to be numbered Paragraph 6 under Section IV on "Rate, Term and Limitation." The proposal as set forth in the Addendum would permit a person covered under a "Family Contract" as a dependent child totally and permanently disabled to convert such contract to an "Individual Contract." Discussion was had for the reason for inserting Paragraph 6. It was pointed out that this would allow a person covered as a dependent child fully and totally disabled to purchase an "Individual Contract" in the event that the "Family Contract" covering such individual be discontinued by reason of death, incompetency, or other causes.

Dr. Elston moved that the Addendum relative to adding a paragraph to be numbered Paragraph 6 under Section IV on "Rate, Term and Limitation" be adopted. The motion was seconded by Dr. King and upon roll call vote was adopted unanimously.

Dr. Brown, President, then called for consideration of approving the "Full Payment Contract," the "Physician's Agreement" thereon and the "Notice of Non-Group Right of Cancellation" required to be a part of Non-Group Contracts as set forth in the Handbook; mailed to each director; and the amendments thereto made at this meeting. Mr. Gormley moved that the "Full Payment Contract" be adopted as amended. The motion was seconded by Dr. Johnson and upon roll call vote was adopted unanimously.

Dr. Hohm moved that the Staff of Blue Shield be directed to do all things necessary to place the "Full Payment Contract" on the market including obtaining the necessary approval of the South Dakota Insurance Commissioner, prepare such Contract for printing and having the same printed; instructing the sales force thereon; and any and all such further steps as may be deemed necessary by Mr. Erickson; that this motion be considered full authority for Staff to proceed with the marketing of the "Full Payment Contract" without further action by the Board of Directors thereon. The motion was seconded by Dr. Sattler and upon roll call vote was passed unanimously.

Dr. Brown, President, then called for a discussion of the present status of the Contract between South Dakota Medical Service, Inc., and the Social Security Administration relative to the "Medicare Program." Mr. Erickson reviewed the various correspondence with the Department of Health, Education and Welfare. Discussion was had relative to the continuing of the Contract with the Department, the necessary expansion of facilities thereon, and the present and current status of the Program. Mr. Erickson advised the Board that the Program is being administered with work being on a current status.

Mr. Erickson presented the correspondence received from the Department of Health, Education and Welfare indicating that the Contract with them would be continued for an ensuing one year period. It was pointed out to the directors that under Article XXII of the Contract of South Dakota Medical Service, Inc., with the Secretary of Health, Education and Welfare, the same was automatically renewed for a period of one year unless written notice of intention not to renew be given by the Carrier or the Secretary ninety days prior to the end of the period of the current contract, the same being June 30, 1967. Upon this basis, the same therefore was automatically renewed for the period from July 1, 1967, to June 30, 1968.

Dr. Brown, President, then called for consideration of "New Business."

Mr. Erickson advised the Board that in view of the increased work load of the Medicare Program and the submission of a proposal to administer Title XIX for the State of South Dakota, that it might be necessary to expand the real estate facility now occupied by the Corporation and owned by South Dakota State Medical Association.

Mr. Erickson further advised the Board that preliminary plans had already been made to provide such space in the event this corporation was selected to administer Title XIX. The cost of such new construction would amount to \$50,000.

Dr. Elston moved that the Board of South Dakota Medical Service, Inc., advise the South Dakota State Medical Association that more space is urgently needed in their present building if Title XIX is to be administered by South Dakota Medical Service, Inc., and should be obtained in the very near future. Further, that South Dakota Medical Service, Inc., loan to the South Dakota State Medical Association up to \$50,000 for expansion purposes subject to the approval of the State Insurance Commissioner, and a mutually agreeable lease on such facilities constructed with the South Dakota State Medical Association. The motion was seconded by Mr. Gormley. Upon roll call vote the same passed unanimously.

Dr. Elston moved that the Executive Committee be appointed to negotiate with the Medical Association on the terms of the lease and the loan. The motion was seconded by Mr. Gormley. Upon roll call vote, the same was passed unanimously.

Mr. Hill discussed the advisability of South Dakota Medical Service, Inc., having a current appraisal of the real estate facilities of the South Dakota State Medical Association, subject to the mortgages of this corporation. Mr. Hill moved that Mr. Erickson be instructed to obtain the services of an appraisal group to make a current appraisal of the real estate of the South Dakota State Medical Association on which this corporation is a mortgage holder. The motion was seconded by Dr. Hohm and upon roll call vote was passed unanimously.

Dr. King moved the nomination of the present officers as set forth hereafter to serve in the same capacity during the next year and that a unanimous ballot be cast:

H. Russell Brown, M.D., President,
John Elston, M.D., Vice President,
Richard C. Erickson, Secretary-Treasurer.

The motion was seconded by Dr. Hohm and upon roll call vote was passed unanimously.

Mr. Erickson then discussed consideration of amendments to the present Plan III Certificates of South Dakota Medical Service, Inc. He submitted to the Board the actuarial figures of Carl Tiffany listing possible added benefits and the actuarial cost thereof. Mr. Erickson also presented the letter of the South Dakota Insurance Commissioner stating that he would permit no amendment that would reduce the present level of accumulation of capital to South Dakota Medical Service, Inc., below a figure of six percent.

Dr. Hohm moved that Family Contracts issued by South Dakota Medical Service, Inc., under present Plan III Certificates be expanded to provide coverage for each unmarried dependent child under twenty-three years of age who is a full time student at an accredited high school, college or university, or an approved school of nursing; and each unmarried dependent child who is totally or permanently disabled, either physically or mentally, regardless of such

child's age, provided such disability occurred prior to age nineteen and such child has been continuously covered by a Blue Shield Contract since his or her nineteenth birthday and that unmarried dependent children shall include step-children and foster children who depend on the subscriber for support and live in the household of the subscriber in a regular parent-child relationship. The motion was seconded by Dr. Elston and upon roll call vote was passed unanimously.

Dr. Sattler moved that present Plan III Certificates of South Dakota Medical Service, Inc., be amended to expand coverage thereunder by including Concurrent Medical Care by a pediatrician for newborn care in the hospital. The motion was seconded by Dr. King and upon roll call vote was passed unanimously.

Dr. Brown then discussed the advisability of increasing benefits under the Complementary 65 Blue Cross-Blue Shield Certificates. Dr. Elston moved that the matter be deferred to the next Board of Directors meeting at which time Staff present a summary of information available on the expansion of such benefits and particularly the cost of reducing the deductible amount set forth in such Certificate. The motion was seconded by Dr. Hohm, and upon roll call vote was passed unanimously.

Mr. Hill reported on behalf of the Finance Committee and stated that any deposits in banks presently exceeding the \$15,000 maximum insurability by the Federal Deposit Insurance Corporation would be re-allocated to other banks in the near future to provide full coverage for all South Dakota Medical Service, Inc., funds on deposit. He further reviewed the transfer of Rushmore Credit Corporation Stock owned by South Dakota Medical Service, Inc., as previously authorized.

Mr. Gormley moved that the meeting be adjourned. The motion was seconded by Dr. King and upon roll call vote passed unanimously. The President declared the meeting adjourned at 1:30 o'clock p.m.

SOUTH DAKOTA MEDICAL SERVICE, INC.

BALANCE SHEET DECEMBER 31, 1966 ASSETS

Ledger Assets:

Cash on hand and in bank	\$133,681.63
Acc'ts. receivable — Federal Program	15,581.92
Acc'ts. receivable — O. A. A. Program	22,000.00
Acc'ts. receivable — N. W. Bell Telephone Co.	1,760.00
Savings Certificates:	
First National Bank, Sioux Falls, S. D.	25,000.00
Farmers & Merchants Bank, Aberdeen, South Dakota ..	15,000.00
Western State Bank, Sioux Falls, S. D.	30,000.00
American National Bank, Rapid City, S. D.	10,000.00
Northwest National Bank, Sioux Falls, S. D.	10,000.00
Citizens Bank, Mobridge, S. D.	10,000.00
Security Bank, Webster, S. D.	10,000.00
Farmers & Merchants Bank, Watertown, S. D.	10,000.00
American State Bank, Yankton, S. D.	10,000.00
First National Bank, Brookings, S. D.	10,000.00
Commercial Trust & Savings Bank, Mitchell, S. D.	10,000.00
Farmers & Merchants Bank, Huron, S. D.	10,000.00
First Federal Savings & Loan, Huron, S. D.	5,000.00
Home Federal Savings & Loan, Sioux Falls, S. D.	5,000.00
U. S. Government Treasury note	10,000.00
U. S. Government Treasury note	30,032.11
Mortgage loan — S. D. Medical Ass'n	28,437.86
Stock — Rushmore Credit Corp., Huron, S. D.	-0-

Total Ledger Assets	\$411,493.52
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LIABILITIES AND RESERVES

Liabilities:	
Accrued State of South Dakota premium tax payable.....	\$ 4,700.15
Withholding tax payable	1,227.40
Social security tax payable	347.53
Accounts payable — Federal and N. W. Bell Telephone group	13,815.00
Total Liabilities	\$ 20,090.08
Deferred Income:	
Unearned subscriber dues	\$ 70,148.71
Reserves:	
Estimated claims not reported	\$128,000.00
Surplus—Unassigned	\$193,254.73
Total Liabilities and Reserves	\$411,493.52

SOUTH DAKOTA MEDICAL SERVICE, INC.
STATEMENT OF INCOME AND EXPENSES
FOR THE YEAR ENDED DECEMBER 31, 1966

Receipts:	
Earned subscription income	\$1,297,442.77
Interest earned	6,714.65
	\$1,304,157.42
Medical and Surgical Claim Expenses:	
Participating physicians	\$ 691,634.11
Non-participating physicians	268,707.67
	\$ 960,341.78
Operating Expenses:	
Salaries	\$ 81,505.51
Travel expense	8,155.61
Rent	8,760.00
Board meeting expense	1,716.64
Boards, bureaus and associations	2,115.75
Legal expense	9,018.45
Printing and stationery	16,852.99
Books, newspapers & periodicals	293.05
Postage	5,397.93
Telephone and telegraph	4,652.69
Advertising	6,777.09
Insurance	539.94
Employee relations	5,517.29
Auditing, actuarial & consulting	2,296.16
Outside service agencies	8,489.33
Miscellaneous expense	43.15
Social security tax expense	3,049.74
Taxes, licenses and fees	5,466.56
Furniture & equipment expense	7,817.09

Office supplies	7,450.50
Payment to Blue Cross	80,679.70
Equipment rental	3,627.30
	<hr/>
	\$ 270,222.47
Less reimbursements	86,129.80
	<hr/>
Net Operating Expenses	\$ 184,092.67
	<hr/>
Total expenses	\$1,144,434.45
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Net Operating Income	\$ 159,722.97
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Other Charges or Credits:	
Estimated reserve for unreported services	11,800.00
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Net Gain to Surplus—Unassigned	\$ 147,922.97
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MINUTES OF THE CORPORATE BODY MEETING
Sheraton-Johnson Hotel, Rapid City, South Dakota
June 3, 1967

The meeting was called to order by the President, H. Russell Brown, M.D.

Present for roll call were Doctors Brogdon, Stransky, Elston, Reding, Quinn, Hohm, Perry, Bartron, Muggly, Tieszen, Leigh, Lewis, Lietzke, Clark Johnson, Tesar, Sweet, Lowe, E. A. Johnson, Bloemendaal, Rosa, Tracy, Auskaps, J. A. Anderson, Scheller, Swanson, David Buchanan, Huet, J. O. Mabee, Vonburg, Devick, Giebink, Begley, McDonald, Pasek, Gregg, Aspaas, Foley, Knabe, Behan, Dzintars, George Angelos, Pokorny, Shining, Frost, Cosand, Lakstigala, and Keller.

Doctor Buchanan moved that the Corporate Body dispense with the reading of the minutes of the last meeting inasmuch as they have been published, and that they be accepted as published. The motion was seconded by Doctor Tracy. Upon voice vote, the motion carried.

Doctor Brown gave a short report on the over-all operation of Blue Shield during the past year, and expressed his appreciation to the Blue Shield staff and the Board of Directors for their cooperation.

Dr. Tracy moved that the Blue Shield financial report be accepted. (See pages 50-51). The motion was seconded by Doctor Bartron, and on voice vote the motion carried.

Doctor Cosand moved that the financial report for ODMC be accepted. The motion was seconded by Doctor Knabe and on voice vote, the motion carried.

STATEMENT OF OPERATING EXPENSE OLD AGE ASSISTANCE — INCLUDING MAA REIMBURSEMENT	
ADMINISTRATION EXPENSE	1966
Salaries	\$16,156.10
Travel	595.53
Rent	3,950.00
Review Committee	
Legal Expense	
Furniture, Equipment	
Printing and Stationery	2,015.72
Books, Periodicals	
Postage	1,213.14
Telephone and Telegraph	574.73
Equipment Rental	5,248.64
Insurance	49.52
Employee Relations	580.86
Auditing	298.70
Refund to Welfare	487.38
Social Security	602.91
Payments to Physicians	
Interest on Loans	500.00
Miscellaneous	
Other Taxes	169.74
	<hr/>
Gross Operating Expenses	\$32,442.97
Less Reimbursements	10,640.00
NET OPERATING EXPENSE	\$21,802.97
	<hr/>

Doctor Tracy moved that the financial report for the Old Age Assistance Program be accepted. The motion was seconded by Doctor Tieszen, and on voice vote the motion carried.

OFFICE FOR DEPENDENTS MEDICAL CARE

Date	Claim Cost	Administration Cost	Total	% Adm. Cost
April 1966	\$ 5,378.00	\$ 235.29	\$ 5,613.29	4.2%
May	4,252.56	319.59	4,572.15	7.0%
June	6,188.75	266.76	6,455.51	4.1%
July	4,290.00	236.82	4,526.82	5.2%
August	4,757.50	227.29	4,984.79	4.6%
September	6,318.75	244.44	6,563.19	3.7%
October	6,215.80	299.75	6,515.55	4.6%
November	1,395.45	401.19	1,796.64	22.3%
December	4,008.50	279.31	4,287.81	6.5%
January	4,187.50	635.76	4,823.26	13.2%
February	3,489.75	299.75	3,789.50	7.9%
March	3,045.25	503.07	3,548.32	14.2%
TOTAL	\$43,897.25	\$3,394.14	\$47,291.39	7.2%

FINAL REPORT O.A.A. and M.A.A. PROGRAMS
(Both Programs Closed Out as of December 31, 1966)

* Figures represent Income and Expenses from July
 1, 1965 to December 31, 1966 (18 months)

OLD AGE ASSISTANCE

ASSETS		1966
1. Cash		\$3,592.39
2. Equipment		4,631.39
TOTAL		\$8,223.78
LIABILITIES		
3. Accounts Payable		\$ -0-
TOTAL		\$ -0-
SURPLUS & RESERVE		
4. Reserve for Dep.		\$ 999.21
5. Surplus		7,224.57
TOTAL		\$8,223.78

MEDICAL AID TO AGED

ASSETS		1966
1. Cash		(\$5,513.22)
TOTAL		(\$5,513.22)
LIABILITIES		
2. Accounts Payable		\$ -0-
TOTAL		\$ -0-
SURPLUS & RESERVE		
3. Surplus		(\$5,513.22)
TOTAL		(\$5,513.22)

NOTE: State Welfare Reimbursed
 Blue Shield \$9,498.00 Jan. 1967

INCOME AND EXPENSE

INCOME		
A. Claims & Adm.		\$388,015.24
CLAIMS EXPENSE		
A. Claims Paid		\$363,208.97
% to Income		93.6%
OPERATING EXPENSE		
% to Income		5.6%
EXCESS INCOME OVER EXPENSE		
		\$ 3,003.30
% to Income		0.8%

INCOME AND EXPENSE

INCOME		
A. Income Welfare		\$130,296.00
CLAIMS EXPENSE		
A. Claims Paid		\$128,097.28
% to Income		98.3%
OPERATING EXPENSE		
% to Income		8.2%
EXCESS INCOME		
% to Income		(\$8,441.28)
		(6.5%)

Doctor Scheller moved that the financial report for the Medical Aid to the Aged Program be accepted. The motion was seconded by Doctor Hohm, and on voice vote the motion carried.

Doctor Bartron moved that the financial report for the Social Security Medicare Program be accepted. The motion was seconded by Doctor Tracy, and on voice vote the motion carried.

MEDICARE**TITLE XVIII PART B****JULY 1966 Through DECEMBER 1966**

INCOME		
A. Claims Income		\$513,950.00
B. Admin. Income		54,600.00
Total Income		\$568,550.00
EXPENSE		
A. Claims Expense		\$536,352.97
B. Admin. Expense		58,035.95
Total Expense		\$594,388.92
% of Adm. Expense to Claims Exp.		10.8%
ADMINISTRATIVE EXPENSE		
Salaries		\$ 30,029.36
Travel		737.51
Rent		3,160.00
Boards & Bureaus		
Legal Expense		1,667.36
Furniture Depreciation		327.30
Equipment Rental		1,058.90
Printing		8,265.71
Office Supplies		3,467.90
Periodicals		33.85
Postage		1,877.14
Telephone		2,203.66
Wire System		
Insurance		
Empl. Benefits		900.39
Auditing		
Service Agencies		2,215.74
Social Security		1,118.59
Board Meeting		372.00
Miscellaneous		4.41
Other Taxes		596.13
NET OPERATING EXPENSES		\$ 58,035.95

STATE WELFARE DEDUCTIBLE PROGRAM**JULY 1966 Through DECEMBER 1966**

INCOME		
A. Claims Income		\$ 54,764.23
B. Administration Income		2,392.37
Total Income		\$ 57,156.60
EXPENSE		
A. Claims Expense		\$ 67,749.56
B. Administration Expense		5,424.39
Total Expense		\$ 73,173.95
% of Adm. Expense To Claims Exp.		8.0%
ADMINISTRATIVE EXPENSE		
Salaries		\$ 2,990.20
Travel		10.00
Rent		450.00
Boards, Bureaus, & Assn.		
Legal Expense		
Furniture Depreciation		33.55
Equipment Rental		45.00
Printing & Stationery		32.30
Office Supplies		567.28
Books, Periodicals		
Postage		216.97
Telephone		93.31
Wire System		
Insurance		
Employee Relations		66.00
Auditing		
Pay to Service Agencies		801.57
Social Security		100.71
Board Meeting		
Miscellaneous		
Other Taxes		17.50
NET OPERATING EXPENSE		\$ 5,424.39

Doctor Bartron moved that the financial statement for the Title I Welfare Deductible Program be accepted. The motion was seconded by Doctor Auskaps, and on voice vote the motion carried.

A majority report of the Nominating Committee was given by John T. Elston, M.D., Chairman. The Nominating Committee moved that T. H. Sattler, M.D.; D. H. Breit, M.D.; and E. A. Johnson, M.D. be re-elected to a three-year term on the Blue Shield Board of Directors. The motion was seconded by Doctor Bartron. Dr. Perry moved that nominations cease and that a unanimous ballot be cast. The motion was seconded by Doctor Tracy, and on voice vote the motion carried.

Doctor Brown directed a few remarks to the Corporate Body regarding the Full Payment Contract, the present financial position of Blue Shield, and various programs being administered by that organization.

Doctor Bartron moved that the Corporate Body adopt the Full Payment Contract, and that the Blue Shield Board be directed to proceed with the marketing of this contract. The motion was seconded by Doctor Cosand, and on voice vote the motion carried.

Doctor Brown discussed the letter received from Arthur Hess of the Social Security Administration concerning the renewal of the Medicare Carrier Contract. He further discussed the appraisal made by the Electronic Data Processing team. No action was taken on this portion of the agenda.

A report on the present status of Title 19 was presented by Doctor Brown, with further comments made by Richard Erickson.

Doctor Bartron moved that the Corporate Body commend Doctor Brown and the Board of Directors for their activities in presenting the Full Payment Contract, and other Blue Shield activities during the past year. The motion was seconded by Doctor Cosand, and on voice vote the motion carried.

Doctor Brown extended his gratitude on behalf of the Board of Directors for this gesture.

Doctor Buchanan moved that the meeting be adjourned. The motion was seconded by Doctor Tracy, and on voice vote the motion carried.

WOMAN'S AUXILIARY TO THE SOUTH DAKOTA STATE MEDICAL ASSOCIATION

WHEREAS, the Woman's Auxiliary to the South Dakota State Medical Association, assembled now for our 57th annual convention at Rapid City, is deeply indebted to many who have contributed to the success of this meeting,

THEREFORE, BE IT RESOLVED, that our sincere appreciation be expressed to:

Our State President, Mrs. Roscoe Dean, Jr., and to her officers, Mrs. T. J. Wrage, Jr., Mrs. T. R. Anderson, Mrs. Courtney Anderson, Mrs. Judson Mabee, Mrs. Bruce Lushbough, and to the chairmen who have served with her, for their leadership, inspiration and information ably presented;

Mrs. R. C. Boyce, and Mrs. Hubert H. Theissen, Convention Co-Chairmen, Mrs. William Janss, President of District IX Auxiliary, and all members of the District IX Auxiliary who made such splendid arrangements for the events of this convention;

Our State Medical Association for our Sunday night dinner, prizes and entertainment, and for the help and assistance which they have so freely given;

Dr. Preston Brogdon, President of the South Dakota Medical Association, for his message at the Monday morning session;

The Sheraton Johnson Hotel, their manager Mr. Ford, and the personnel for their cooperation in arranging convention activities;

The Rapid City Chamber of Commerce for their assistance;

Mrs. W. A. Merritt, National Director of the Woman's Auxiliary to the American Medical Association, Rochester, Minnesota, for her inspiring message at our luncheon and her appearances on radio and television;

General Riebord C. Neeley, 821st Strategic Air Space Division, Ellsworth Air Force Base;

Colonel Carl Kluender, Base Commander, Combat Support Group, Ellsworth Air Force Base, Colonel Robert N. Reiner, 821st Medical Group, Ellsworth Air Force Base, and Lt. Daniel H. Crippen, Information Officer, Ellsworth Air Force Base, for arranging and providing the convention with tours, meeting places and luncheon at the base for our program on Tuesday;

Mrs. A. P. Reding for 17 years service as editor of our Newsletter, and particularly for her work in getting out the convention issue;

The Rapid City Daily Journal, and in particular, Darlene Pond, Barbara Hinton and Ken Norgard for the news coverage of the convention activities;

To Polly Weedman and Vern Shepand of radio station KOTA for their assistance in giving us special coverage;

To Randy Norris and KOTA for their cooperation in our special television program on Tuesday afternoon;

AND BE IT FURTHER RESOLVED that this resolution be reported in the minutes of this meeting and printed in our Newsletter, and that a copy of this resolution be sent to the aforementioned.



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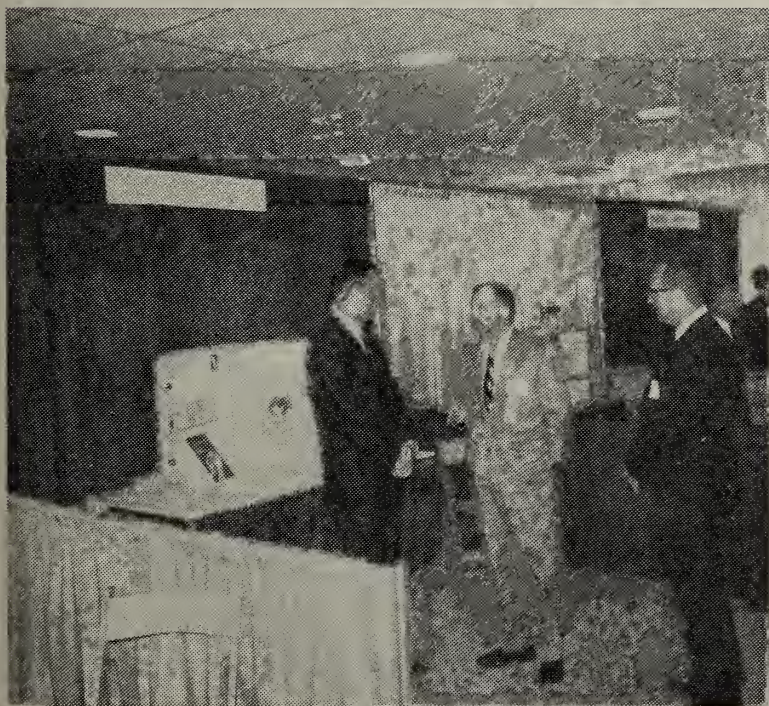


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 *Carney, M. Ft. Worth, Texas
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 Charbonneau, Y. H. Huron
 *Chassell, J. L. Belle Fourche
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 Cutshall, V. K. Sioux Falls
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 *Donahoe, W. E. Sioux Falls
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 *Green, R. D. Sioux Falls
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 Greenfield, R. E. Sioux Falls
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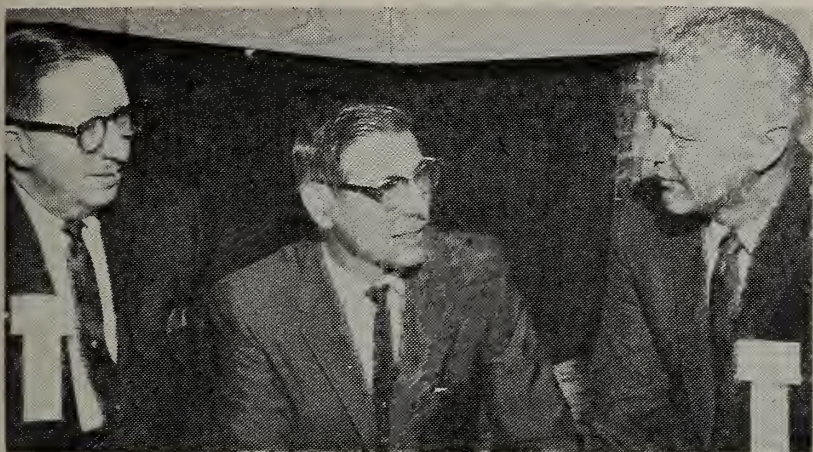
Gregory, D. A. Milbank
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 *Grove, M. S. Sioux Falls
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McGreevy, J. V.	Sioux Falls	Salladay, I. R.	Pierre	Wagner, Loyd	Sioux Falls
McHardy, B. R.	Sioux Falls	Salmon, D.	Sioux Falls	Walton, J.	Martin
McIntosh, G. F.	Eureka	Sanders, M. E.	Redfield	Watson, E. S.	Brookings
McVay, C. B.	Yankton	Sanderson, E. W.	Sioux Falls	Weatherill, D. W.	Mitchell
Mead, T.	Spearfish	Saoi, N. B.	Yankton	Weaver, R. J.	Sioux Falls
Merryman, M. P.	Rapid City	Sattler, T. H.	Yankton	Weber, R. A.	Mitchell
Millea, R. P.	Rapid City	Savage, L.	Yankton	Wegner, K. H.	Sioux Falls
Miller, Walter C.	Aberdeen	Saxton, A. J.	Kansas	Werthmann, H.	Pierre
*Mills, G. W.	Wall	Saxton, W. H.	Huron	Wessman, N. E.	Sioux Falls
Moller, C.	Dell Rapids	Saylor, H. L., Jr.	Huron	*Westaby, J. R.	Madison
Monfore, James	Winner	Scheffel, A.	Redfield	Westaby, R. S., Jr.	Rapid City
Monson, C. D.	Parkston	Scheller, D. L.	Arlington	Westland, G. I.	Onida
Moore, E. J.	Vermillion	Schultz, R. D.	Sioux Falls	Whitney, N. R.	Rapid City
Morrissey, M. M.	Pierre	Seaman, David	Aberdeen	Whitson, G. E.	Madison
Mueller, E. H.	Tripp	Sebring, F. U.	Vermillion	Willcockson, T. H.	Yankton
Muggly, J. A.	Madison	Semones, A., Jr.	Lead	Willen, Abner	Clark
Munson, H. B.	Rapid City	Sercl, W. F.	Sioux Falls	Williams, B. J.	Sioux Falls
Murdy, C. B.	Aberdeen	Shaeffer, J. H.	Sioux Falls	Williams, F. R.	Rapid City
Murphy, J. C.	Hot Springs	Shaskey, R. E.	Brookings	Williams, M. F.	Sioux Falls
Murphy, J. T.	Mitchell	Sherrill, S. F.	Belle Fourche	Wingert, M.	Garretson
Mutch, M. G.	Sioux Falls	*Sherwood, C. E.	Madison	Wold, H. R.	Madison
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Nolan, B. P.	Mobridge	Slingsby, J. B.	Rapid City	Zanka, J. A.	Rapid City
Norgello, V.	Redfield	Smiley, J. C.	Deadwood	*Zimmerman, Goldie E.	
Odland, W. B.	Huron	Smith, G. W.	Sioux Falls		Missoula, Montana
Ogborn, R. J.	Sioux Falls	Smith, J. J.	Lead	Zvejnieks, K.	Aberdeen
Olson, R. G.	Sioux Falls				

M.S.—Indicates Military Service

*—Indicates Honorary Membership

NEW ASSOCIATION OFFICERS



(Left to Right) **A. P. Reding, M.D.**, Secretary-Treasurer, Marion; **John T. Elston, M.D.**, President-Elect, Rapid City; and **John J. Stransky, M.D.**, President, Watertown. Not shown are **R. H. Quinn, M.D.**, Vice President, Sioux Falls, and **R. H. Hayes, M.D.**, Speaker of the House, Vermillion.



At the Annual Dinner-Dance in Rapid City, **Preston Brogdon, M.D.**, President of the South Dakota State Medical Association presented the Association's Distinguished Service Award to **Mrs. William Fish of Watertown**, for her years of work with retarded and handicapped children.

Receiving the Association's Community Service award is **G. Robert Bartron, M.D.**, also of Watertown. The award, sponsored by the **A. H. Robins Pharmaceutical Company**, is presented annually to a physician who has been outstanding in community affairs.



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...consolidates fluid stools with pectin
...adsorbs irritants with kaolin,
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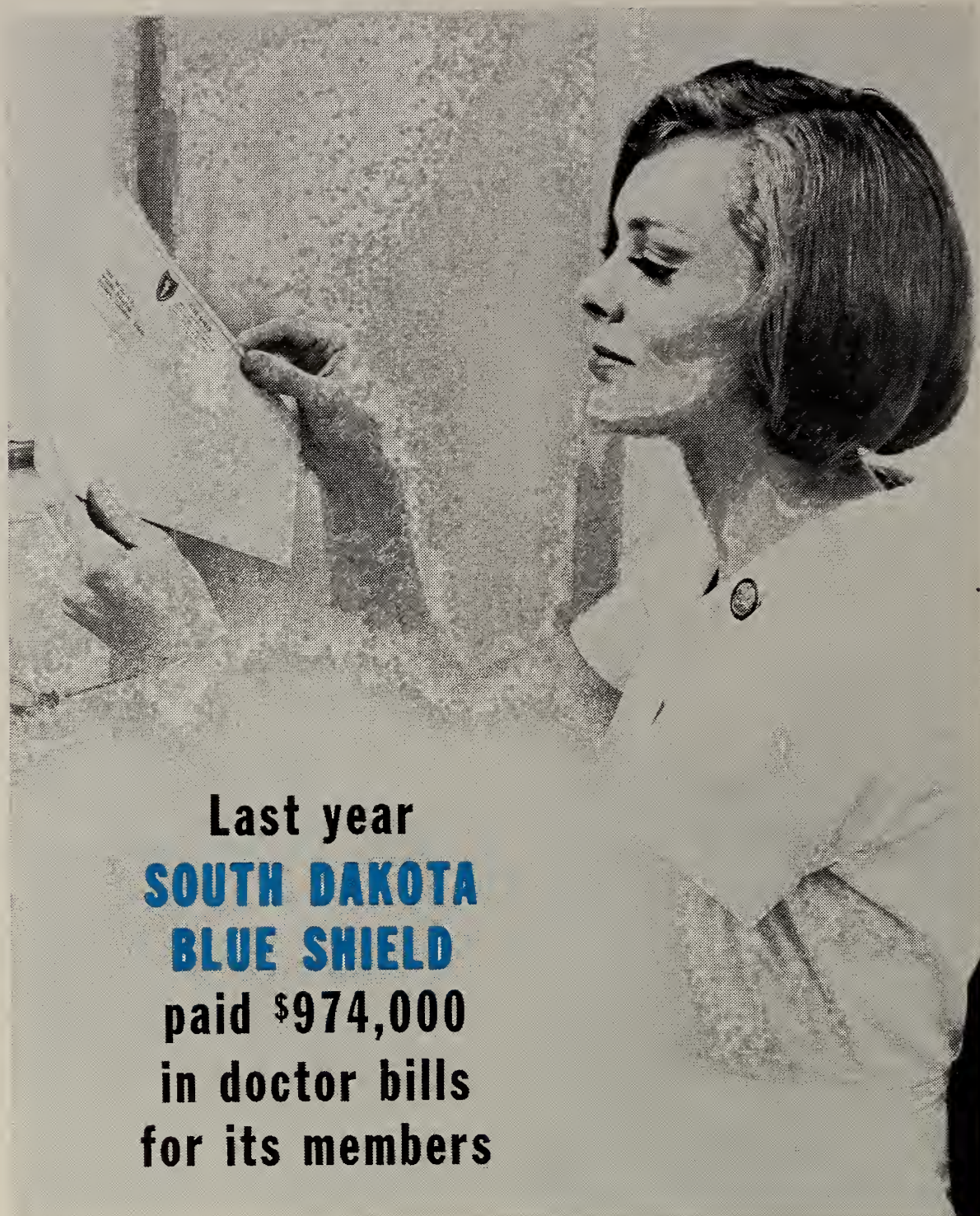
warning: may be habit forming

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(alcohol 0.69%)

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COMMENTARY



From

THE UNIVERSITY OF SOUTH DAKOTA SCHOOL OF MEDICINE

Edited by: Dr. Charles R. Gaush, Publications Committee

FACULTY SALARIES

Contracts have been received, signed and returned, after which the usual question arises in the minds of the staff: how do I compare with my colleagues at other institutions? The answer to this question is very difficult if not impossible to obtain due to different methods of reporting salaries, the use of 9, 11 and 12 month contracts, differences in assistance reported as fringe benefits, etc. The most accurate and reliable information available is that published annually by the American Association of University Professors (AAUP) which lists average salaries and total compensation using data provided by 25 medical schools. The data concern only the basic science staff and all types of schools and geographical locations are represented.

The accompanying table shows the significant differences between the national average and the average salaries for each rank paid at USD. All salaries have been converted to a 12 month basis.

A study of this table reveals that the difference in average salary for all ranks is \$3,973 with a difference of \$6,376 for the rank of full professor. It also shows that the average fringe benefit paid in the United States is \$2,068 while at USD it is about \$500 which represents Social Security and a minimal retirement program. It should be noted that the values reported by the AAUP are for the fiscal year 1966-67 whereas the figures for USD are for fiscal 1967-68.

The differences in total compensation must be viewed with concern especially when we entertain thoughts of a four-year medical school for South Dakota. This would certainly involve some difficulty in staffing since, at the present time, the School of Medicine has 22% of its staff positions unfilled. In actual fact, it has been estimated that at least 6 additional staff members are needed to keep up with the increased work load expected due to the increased student body.

As has been stated previously on these pages, "The medical faculty at USD is, on the whole, a dedicated, sincere and accomplished staff . . . This is no good reason why advantage should be taken of them." (SDJM, Oct., 1966, p. 47)

CONSTRUCT LARGE FACILITY

The School of Medicine of the University of South Dakota is in the process of constructing a large animal facility consisting of approximately 1,450 square feet, to be located on the north campus of the University of South Dakota. This facility will function as a receiving and holding facility for several species of animals used in the teaching and research programs at the School of Medicine. It will consist of inside and outside areas which will permit the proper holding and exercising capabilities now required by legislation passed through the Federal Government. Both the inside and the outside areas will eventually be partitioned with the latest tile and chain link fencing so as to permit isolation or segregation as may be indicated by the particular species or sex of animals being used. Basic construction of the facility is to be concrete block on a concrete floor with a precast roof. The facility will have its own heating plant and ultimately an air-conditioning unit as well as its own sewage system and water supply. The facility will hopefully be completed before registration this fall.

LIBRARIAN RETIRES

Effective July 1, 1967, Mrs. Esther Howard has retired as Medical School Librarian of the School of Medicine, University of South Dakota. Mrs. Howard has served the University of South Dakota for some twenty years prior to her recent retirement. In her capacity as Medical School Librarian she has served the faculty and students at the School of Medicine and physicians throughout the state in an admirable and capable manner. Mrs. Howard is now a resident of Pueblo, Colorado, where she will serve as librarian for the Colorado State Hospital. Her home address is 3104 San Isabel Avenue, Pueblo, Colorado 81003.

RANK	SALARY (12 MO.)		TOTAL COMPENSATION+		DIFFERENCE IN TOTAL COMPENSATION
	USA*	USD**	USA*	USD**	
Professor	\$23,676	\$17,300	\$26,196	\$17,800	\$8,396
Assoc. Prof.	18,000	14,833	19,980	15,333	4,647
Asst. Prof.	14,652	12,266	16,356	12,766	3,590

*From the AAUP BULLETIN, Summer, 1967, p. 157; salaries reported are for 1966-67.

**Average salaries for 1967-68. + Salary plus all fringe benefits.

Letters to the Editor

AMERICAN CANCER SOCIETY
South Dakota Division, Inc.
June 8, 1967

Mr. Dick Erickson, Executive Director
South Dakota State Medical Association
711 North Lake Avenue
Sioux Falls, South Dakota 57104

Dear Dick:

Just a note to extend my sincere appreciation for all the courtesies extended to me and the American Cancer Society at your 86th annual meeting in Rapid City this week.

Please put the name of the American Cancer Society down as an exhibitor for your meeting next year in Aberdeen and if we can be of any assistance to you in preparing next year's program agenda, please advise.

With best personal regards, I remain,

Sincerely,
GORDON R. GARNOS
Executive Vice President

June 23, 1967

Mr. Dick Erickson
Executive Secretary
South Dakota Medical Association
711 North Lake
Sioux Falls, South Dakota 57104

Dear Mr. Erickson:

We certainly want to express our thanks to the State Medical Association for all the assistance they gave to the Woman's Auxiliary at the State Convention.

We enjoyed and appreciated the Sunday night dinner as well as the prizes and entertainment. The State Medical Association has been most generous to our group and we are most grateful to them.

Sincerely,
Mrs. Judson Mabee
Secretary
Woman's Auxiliary to the S.D.S.M.A.

Mr. Richard Erickson
Executive Secretary
South Dakota State Medical Association
711 North Lake
Sioux Falls, South Dakota

Dear Mr. Erickson:

Will you please tell the South Dakota State Medical Society that I thoroughly enjoyed attending their annual banquet on June 5 — and that I was more than pleased to be seated at the head table. I truly appreciate this thoughtful gesture.

With sincerity and my good wishes to their society for another successful year.

Thelma H. Merritt
North Central Regional Vice President
Woman's Auxiliary to the American
Medical Association

Rapid City, South Dakota
June 9, 1967

Mr. Richard Erickson, Secretary
South Dakota State Medical Association
711 North Lake
Sioux Falls, South Dakota

Dear Dick:

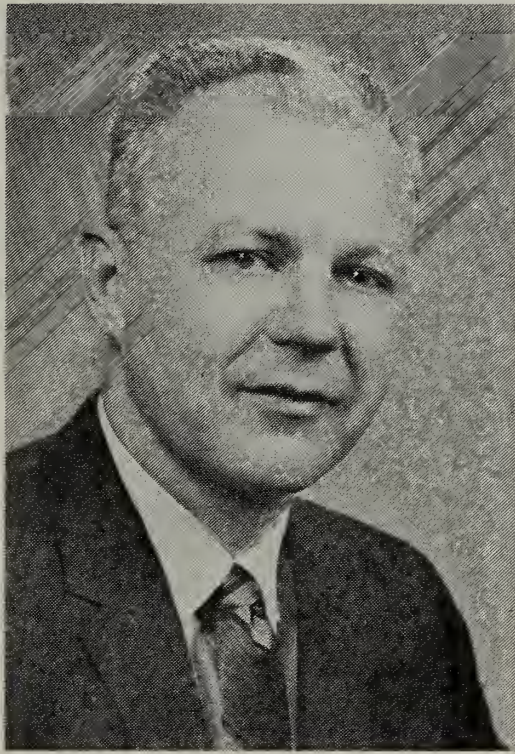
I wish to extend my personal congratulations to you and your staff on an extremely fine meeting of the South Dakota State Medical Association. Meetings of this size are extremely difficult to organize, conduct and administer. You and your staff conducted this meeting with the greatest efficiency and thought for all persons attending the meeting.

It was a pleasure to see you again and I hope in the future that we will be able to work together again.

Thanks again for a fine meeting.

Sincerely yours,
Grant Olsen
Exhibitor

P R E S I D E N T ' S P A G E



Greetings:

We have often been told that Medicine is at the crossroads. The expression hardly seems adequate today. We're on a busy freeway during the rush hour. The flow of traffic is heavy and fast. Some of the drivers are less than cautious; not all have the same destination. Our options are somewhat limited and we're forced to recognize the existence of the traffic about us.

Most of us would rather be on a different road! Who designed this thing anyway? Medicine used to build its own roads. The Medicare curve was laid out and constructed without much direction or advice on our part. The Medicaid strip is being poured now; we are playing a part in this construction at the State level and will continue to do so. The Federal designers have other cloverleaves and interchanges on the boards. Some of them are dillies!

We had all better become more active—through AMA, SDSMA, AMPAC, SoDaPAC — in shaping the design of the road ahead. If we don't there will be much loud complaining about the lane we're stuck in later on. It's tough to tear up concrete after it is laid!

JOHN J. STRANSKY, M.D.

President



"George wants to know if it's okay to take his cold medicine now, Doctor, instead of seven o'clock?"

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News Notes • Changes • Births • News

Pop's Proverb

The flavor of life is like coffee in that some folks like it weak.



Dr. Robert H. Hayes (left) receives Superior Service Award from Deputy Surgeon General Leo J. Gehrig (right). Also extending congratulations is Dr. Carruth J. Wagner, Director, Bureau of Health Services, (center).

Robert H. Hayes, M.D., Vermillion, was presented a Superior Service Award by Deputy Surgeon General Leo J. Gehrig on June 6th. The award cited Doctor Hayes for his outstanding leadership and professional support under very difficult operating conditions while directing the PHS Medical Team at the Vietnam Provincial Hospital in Nha Trang from January 3, 1966 to January 3, 1967.

The American Medical Association held its annual convention in Atlantic City June 17 - 22. South Dakota doctors attending that meeting included **John Stransky, M.D.**; **John Elston, M.D.**; **Robert Quinn, M.D.**; **A. P. Reding, M.D.**; **George McIntosh, M.D.**; **James Tieszen, M.D.**; **Arthur Lampert, M.D.**; **Roscoe Dean, M.D.**; and **Chester McVay, M.D.**

Durward M. Lang, M.D., is now associated in the practice of pathology with the Laboratory of Clinical Medicine (Drs. Karl H. Wegner, Richard J. Weaver, John F. Barlow, and Richard D. Schultz) in Sioux Falls.

Dr. Lang is a native of the Huron-Wolsey area, graduated from Huron College and attended medical school at the University of South Dakota and Southwestern in Dallas, Texas. He interned at Minneapolis General Hospital and recently completed pathology residency at the University of Colorado.

* * *

The following individuals were elected officers of the Blue Shield Board of Directors at the June 4th meeting in Rapid City: **H. Russell Brown, M.D.**, President; **John T. Elston, M.D.**, Vice President; and **Richard Erickson**, Secretary-Treasurer.

Re-elected to the Board of Directors were **Donald Breit, M.D.**, Sioux Falls; **T. H. Sattler, M.D.**, Yankton, and **E. A. Johnson, M.D.**, Milbank.

**YOUR
CONTRIBUTION
TO THE
SOUTH DAKOTA
MEDICAL SCHOOL
ENDOWMENT
FUND
IS NEEDED**

The South Dakota Pediatric Society re-elected at their meeting on June 5, 1967, in Rapid City, the following slate of officers: **H. W. Farrell, M.D.**, Sioux Falls, President; **W. F. Stanage, M.D.**, Yankton, President-elect; **E. H. Heinrichs, M.D.**, Watertown, Secretary-Treasurer.

* * *

Robert A. Buchanan, M.D., Huron, has been reappointed by Governor Nils Boe to the State Board of Medical and Osteopathic Examiners.

South Dakota's representatives at the AMPAC Meeting June 3rd and 4th included **Howard Wold, M.D.**, Madison; **R. B. Leander, M.D.**, Sioux Falls; Otto Schnaidt, D.D.S., Aberdeen; and USD Medical students Ted Stekly, Mike Singsas, John Stauch and Dick Bray.

H. Dean Hughes, M.D., Clear Lake, and Donna Elliott, also of Clear Lake, were recently united in marriage.

Mrs. Hughes is administrator of the local hospital.

Donn Driver, M.D., former Chief of Medical Service at the Veterans Hospital in Sioux Falls, has moved to Fort Snelling, Minnesota. Doctor Driver will command the 5501 U. S. Army Hospital at that location.

R. C. Jahraus, M.D., Pierre, has been appointed to the South Dakota State Board of Medical and Osteopathic Examiners by Governor Nils Boe. Dr. Jahraus will fill the unexpired term of **E. P. Sweet, M.D.**, Burke, who resigned.

RESIDENCY IN INTERNAL MEDICINE

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St. Paul, Minnesota

Applications are now being accepted for Medical Residencies at the first, second, and third year levels, to begin during the second half of 1967. Active program includes experience in sub-specialties, and participation in a 50,000 visit out-patient clinic, as well as supervised treatment of in-patients. Teaching staff members are all board certified, and the majority hold faculty appointments at the University of

Minnesota Medical School. Hospital also conducts residencies in General Surgery, Obstetrics-Gynecology, Radiology, Pathology, Ophthalmology and Urology, and is approved for twelve rotating internships with applications accepted only through the National Intern Matching Program. For descriptive brochure and application blanks, address inquiry to:

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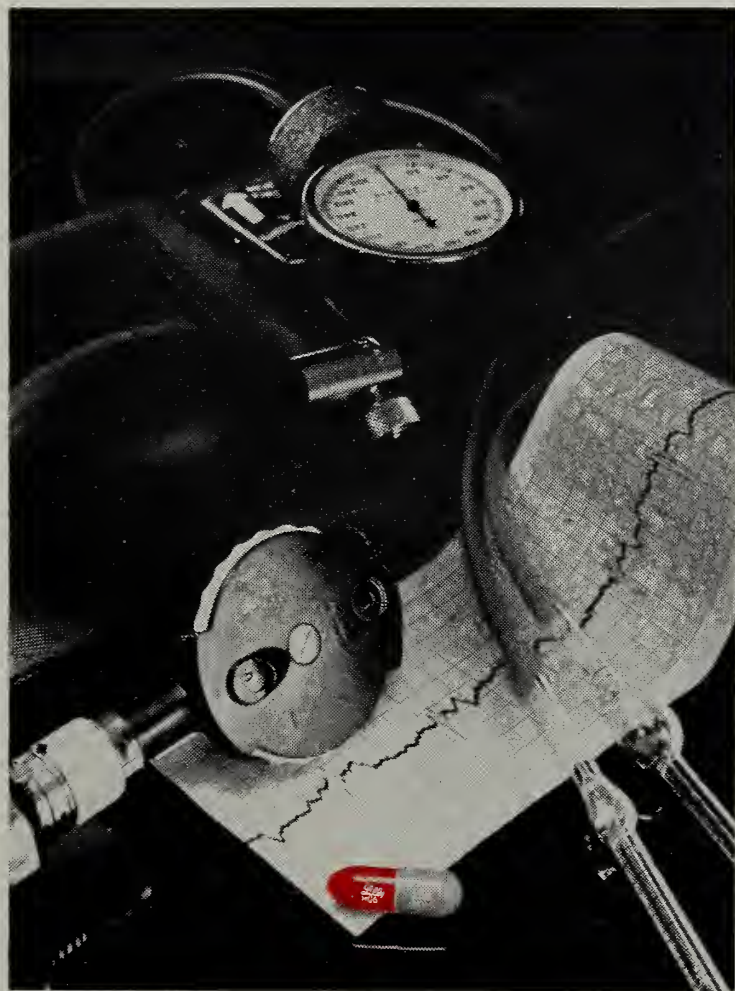
JOURNAL

BY THE S.DAK. STATE MEDICAL ASSN.

OF

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SEPTEMBER • 1967



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References:

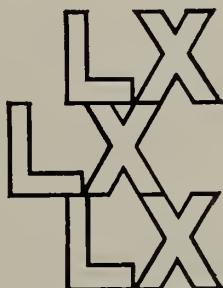
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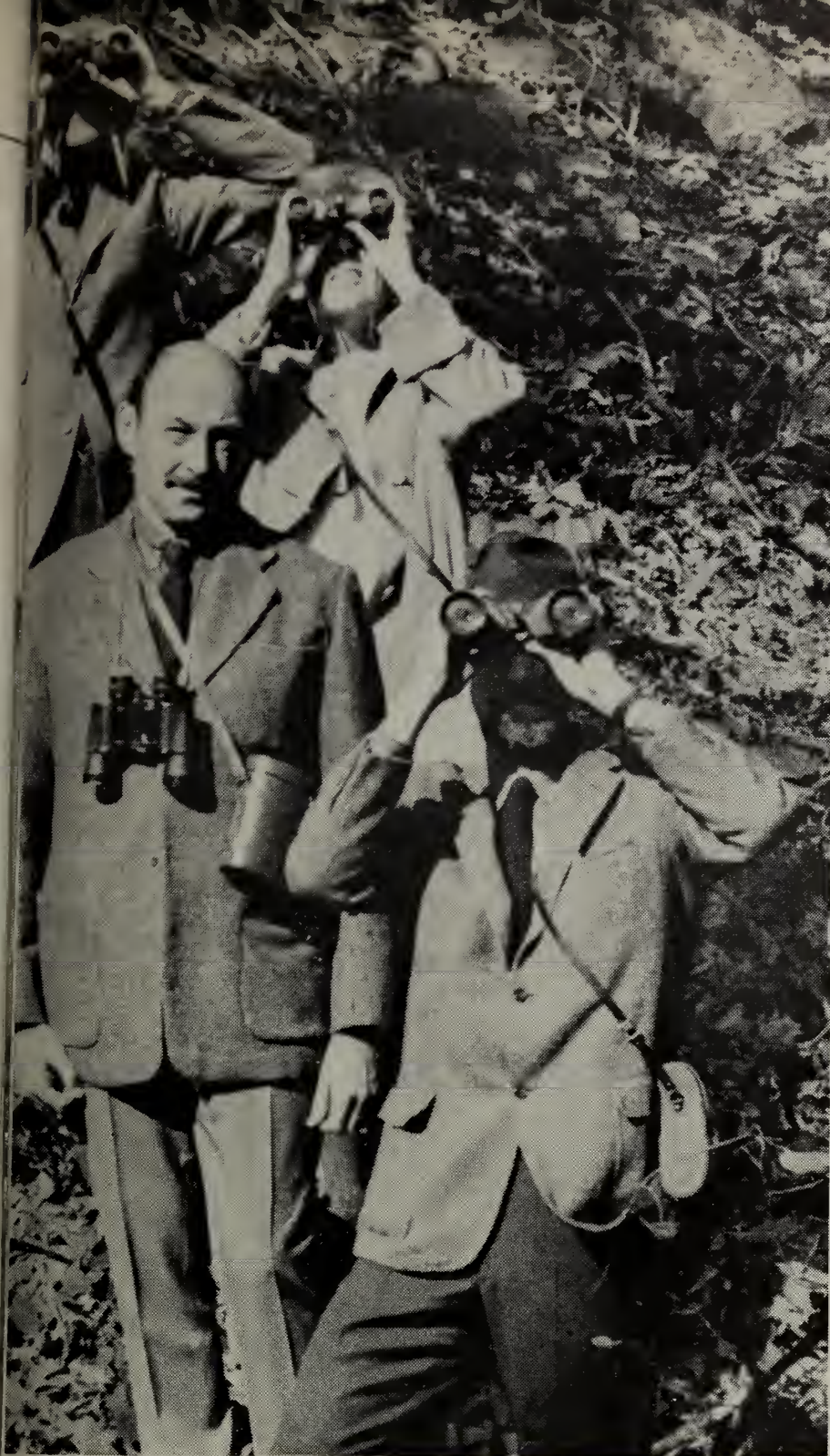
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Picture of painful myositis

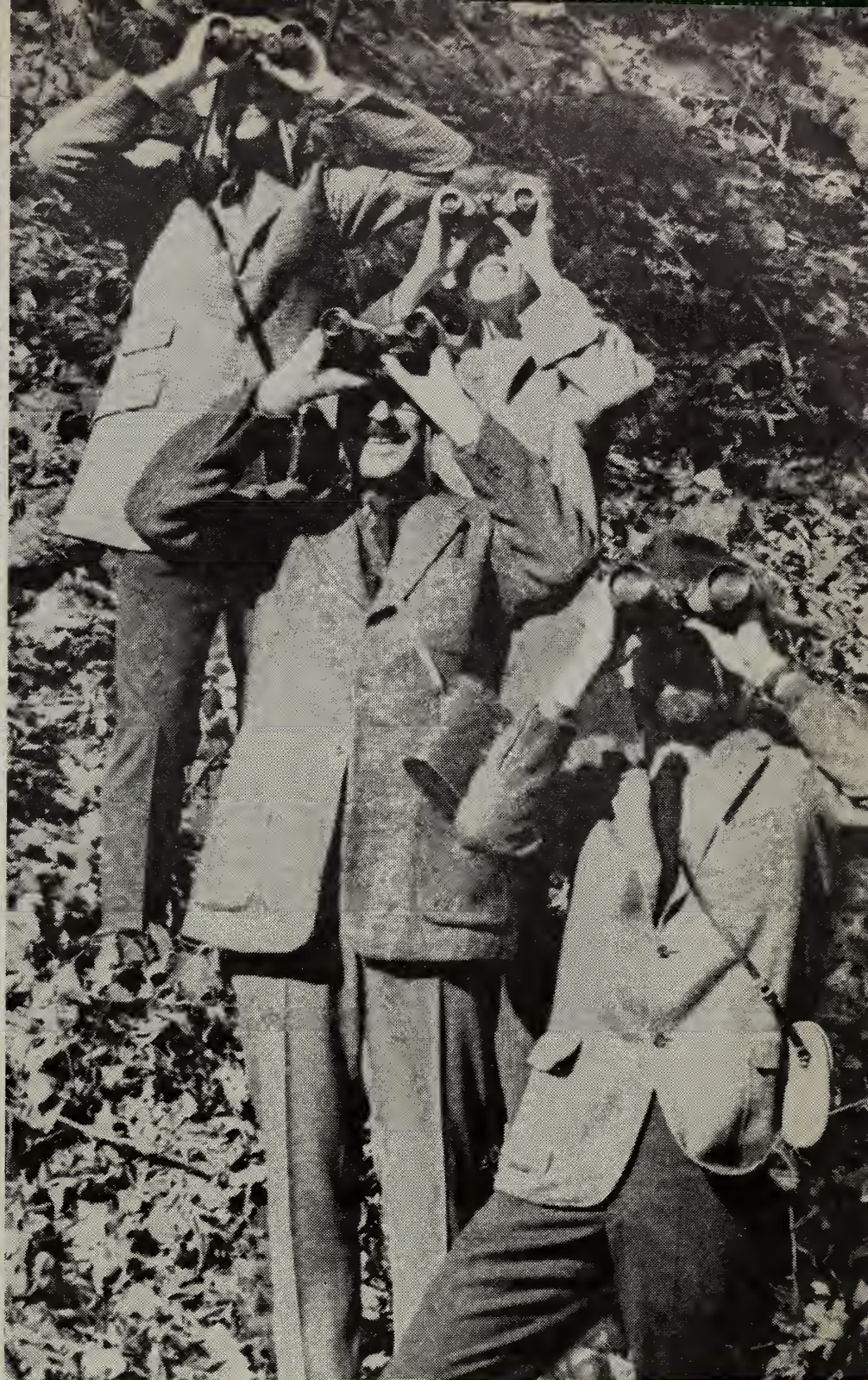
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Volume XX

September, 1967

Number 9

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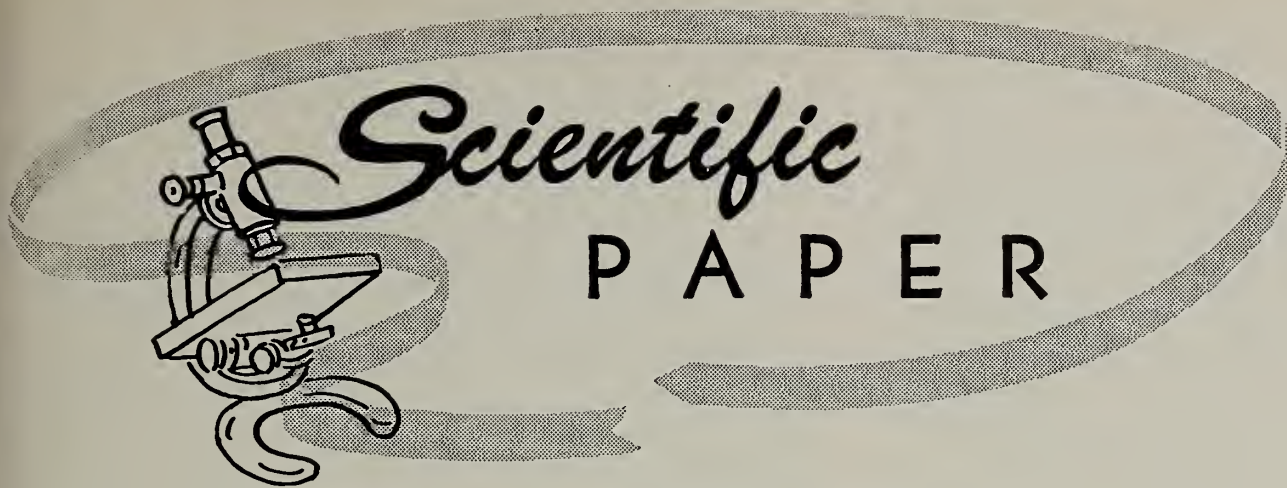
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COOPERATION BETWEEN CLERGYMAN AND PHYSICIAN

Rev. Alvin J. Straatmeyer†
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and

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Because the physical, emotional, and spiritual needs of man are so greatly inter-related and interdependent, the necessity of cooperation between physician and clergyman can hardly be overstated. In the past, however, such cooperation has manifestly been both minimal and superficial. But to the delight of many in both professions, a reversal of that situation has become evident and the pendulum has begun its long over-due swing toward a significant cooperation and a healthy rapport between the two.

It is our intention in this treatise to begin an exploration of this matter of doctor and minister working side by side. We shall momentarily consider a few general aspects of this cooperation, and then delve into a more detailed study of four specific areas where collaboration is most advantageous and desirable. These four particular concerns are — the mentally ill, the psychosomatic patient, the alcoholic, and the suicidal person.

It is little wonder that increasing numbers of physicians and clergymen are raising their voices to plead for a greater cooperation between these two old and respected professions.

In many cases, the doctor and pastor are working with the same patient at the same time and facing the same obstacles. Russell L. Dicks comments in this regard, "In actual practice the physician and the clergyman often are working upon the same specific problem."¹ This being the case, it should be obvious that the effectiveness of the service of both pastor and physician is impaired when they continue to work independently of each other. And most tragic of all, it is the patient who must bear the ultimate cost of such separated services.

Richard K. Young and Albert L. Meiburg further point out how unfortunate and absurd it is when doctor and pastor pay no heed to the ministrations of the other. They say:

"Too often the sick person is dealt with by the physician and the minister without the knowledge of their common effort and goal and in some instances all three individuals are members of the same church. The pathetic weakness lies in the fact that each worker, too often, is going his own way, whether he carries a black bag or a Bible, with little attempt at communication with the other."²

There can be no confuting the fact that many communication gaps have existed and many still do, but as we survey today's scene it appears that substantial and gratifying efforts

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1. Russell L. Dicks, **Pastoral Work and Personal Counseling**, New York: Macmillan Company, 1944, p. 207.
2. Richard K. Young and Albert L. Meiburg, **Spiritual Therapy**, New York: Harper & Brothers, 1960, p. 173.

are now being made in the direction of communication and cooperation between doctor and pastor.

As we have briefly indicated above, it is inevitably the patient who suffers when his pastor and his physician labor independently. Dicks buttresses this contention when he avers, "... the doctor and the minister have worked independently of each other to the patient-parishioner's detriment."³ Richard Young says much the same thing except that he approaches it from a positive angle. He notes that in the past the minister and the doctor have for the most part gone their separate ways, not being too concerned about this matter of cooperation. But then he says, "Today the hospital chaplain and doctor in the general hospital are finding that cooperation is extremely advantageous to the patient."⁴ We believe that it is irrefutably true that the patient's welfare alone is sufficient warrant for communication and cooperative service between doctor and pastor.

John Sutherland Bonnell strikes an important chord as he says that when the clergyman and physician come to see this pressing need for cooperation, a foundation for such is easily laid, and may in fact already exist. His own words say it best:

"No matter what happens to be manifest at any given moment in the relationships of ministers and physicians, there exists nevertheless latently a community of interest, techniques, and goals. When either the minister or the doctor seeks a better degree of cooperation between their respective professions, each may know that already there exists a basis for such cooperation."⁵

It is heartening to know that if the desire to cooperate is present, the achievement of that cooperation may not be extremely difficult.

Neither the physician, the psychiatrist, nor the pastor need entertain any fears that in the arena of cooperation, his particular skills will be superseded and made unnecessary by those of the others. Although there is indubitably an overlapping of function at certain points, the finely honed skills of all three professional persons will be in demand. It may be that when the roles of each practitioner are clearly established, the possibilities for cooperation will be the greatest. Carroll Wise, we believe, does an excellent job of succinctly defining these roles:

"The physician who treats physical illnesses may be primarily concerned with altering the structure and functioning of a given organ.

He may or may not be aware of, or interested in, the problem of the patient's relationships. The psychiatrist who is primarily interested in psychotherapy is very much concerned with the patient's relationships, though he is also concerned with structural changes within the patient's body. The pastor, representing religion, is primarily concerned with the problem of relationships and secondarily concerned with organic processes. He may help a person with a sense of guilt, but he is not in any position to treat a structural change which that guilt may have created."⁶

Understanding these distinctions and realizing the specific expertise of the other, a major thrust can be made in the direction of cooperation between them.

Among the many practical manifestations of a cooperative spirit is the matter of referrals. Oftentimes it is only after a referral has been made that cooperation becomes a possibility. The door is then open and certain definite steps can be taken, and often not until then. As we proceed in this paper, it will become evident that the advisability and necessity of referral must almost constantly be kept in mind.

Since referrals occupy such a prominent place in the cooperation between pastor and doctor, it is incumbent upon both to establish a meaningful relationship between them. When the rapport and the respect between the two is present, referrals should become a very natural thing. Howard J. Clinebell, Jr., makes this pertinent comment in this regard, "In most communities there is at least one physician who will welcome a collaborative relationship with a competent counseling pastor. In such mutually helpful relationships referral becomes a two-way street, as it should be."⁷

Now, having made these few fundamental observations, we proceed to the first of the four specific concerns of this paper, that being how pastor and physician and/or psychiatrist become co-laborers in the case of the mentally ill person.

THE MENTAL PATIENT:

In the category of the mentally ill, we are in this present endeavor including both those who are considered to be neurotic and those who are manifestly psychotic. It goes without saying that it is not an easy undertaking to define these terms, nor is it always a simple task to delineate the distinction between the normal and the neurotic, and between the neurotic and the psychotic. Walter C. Alvarez, a widely re-

3. Dicks, *op. cit.*, p. 207.

4. Richard K. Young, *The Pastor's Hospital Ministry*, Nashville, Tennessee: Broadman Press, 1954, p. 9.

5. John Sutherland Bonnell, *Pastoral Psychiatry*, New York: Harper & Brothers, 1938, p. 200.

6. Carroll A. Wise, *Psychiatry and the Bible*, New York: Harper & Brothers, 1956, p. 130.

7. Howard J. Clinebell, Jr., *Basic Types of Pastoral Counseling*, Nashville, Tennessee: Abingdon Press, 1966, p. 179.

nowned physician, says, "After reading definitions of the words 'neurotic' and 'psychoneurotic' given by many authorities, I am sure of only one thing and that is that they do not all agree."⁸ And further, "No one has ever found a satisfactory definition of psychosis."⁹

But in spite of this difficulty of definition, it is advantageous for us to have some understanding of the type of person with whom we are dealing when we speak of the mentally or emotionally disturbed person. Henry P. Laughlin, a psychiatrist in the George Washington University School of Medicine submits the following as a clarification of the term, "neurosis":

"(1) An emotional illness or disorder without marked loss of contact with reality in thinking and judgment. (2) A disturbance of emotional adaptation due to unresolved internal (i.e., unconscious) conflict. Usually less severe than psychosis. . . . (3) The solution of inner emotional conflicts in a manner that handicaps, to varying degrees, the effectiveness of a person in living. The neurosis always affects the personality structure as a whole."¹⁰

And whenever we employ the term, "psychosis," we will understand it to mean an emotional disorder more extreme than neurosis and requiring intensive therapy.

Contrary to certain opinions and practices of the past, the church and its clergy are beginning to see that religion does have a distinct role to play in the recovery of many people who are suffering from neurosis and psychosis. In days not too far behind us, the clergy often assumed a futilitarian stance when it came to mental illness. As far as many ministers were concerned, the whole multitude of individuals suffering from serious emotional disturbances was placed exclusively in the lap of the psychiatrist. Seward Hiltner notes this, "But this does not say that the minister should wash his hands of the whole matter which, by and large, is what the church has done with psychosis. It has been content to leave psychotics completely in the hands of the physician."¹¹

There are many in the ranks of both medicine and religion who believe that a vast number of patients afflicted with mental illness can be markedly helped by a cooperative approach on the part of doctor and pastor. Young is one of the advocates of cooperation in the case of the mentally ill as he claims, "In some instances

the process of healing can be speeded up when the patient has access to both minister and psychiatrist at the same time. Especially is this true when the patient is unable to incorporate into his religious belief some explanation of human nature."¹² Then he adds, "Teamwork between the pastor and the psychiatrist can be especially vital when the patient feels that his condition is a reflection upon his Christian faith."¹³

Hiltner is another who espouses the view that for the mental patient's good, if for no other reason, doctor and minister ought to work unitedly. He asserts:

"Yet the significance of the pastor's working side by side with the physician, even in cases of serious mental disorder, is very great. Experience has shown that patients, even in the deepest psychosis, may derive much value from a service of worship or a call from a minister."¹⁴

And finally, at this point, we offer the substantiating testimony of Alvarez, "There are some patients who can be helped through religion and the efforts of a spiritual advisor, and the good physician will use such help whenever he can."¹⁵

These comments, we maintain, confirm our claim that the patient is greatly benefited by a cooperative approach. But we would be exceedingly short-sighted if we insisted that the patient is the only one aided. The minister and the psychiatrist serve each other as well when they proceed cooperatively. This truth is frequently lost in the concentration on the patient's benefits.

Young suggests much the same when he says:

"As the pastor and the psychiatrist, each in his distinctive role, move side by side into the mental processes of the patient, values accrue from this relationship that do not exist in the single handed approach. Not only is the pastor's work made more effective by his access to the psychiatrist's interpretation of the deeper dynamics involved, but each can serve to enhance and support the role of the other."¹⁶

As we see it, in this "enhancing and supporting the role of the other," we find one of the more significant benefits of cooperation. Many of the people needing psychiatric help who come to the pastor need to be reassured concerning the value they will find in psychotherapy. The minister has in that situation a unique opportunity to engender confidence in the psy-

8. Walter C. Alvarez, *The Neuroses*, Philadelphia: W. B. Saunders Company, 1951, pp. 21, 22.

9. *Ibid.*, p. 22.

10. Henry P. Laughlin, *The Neurosis in Clinical Practice*, Philadelphia: W. B. Saunders Company, 1956, p. 725.

11. Seward Hiltner, *Religion and Health*, New York: Macmillan Company, 1943, p. 156.

12. Young, *The Pastor's Hospital Ministry*, op. cit., p. 48.

13. *Idem.*

14. Hiltner, op. cit., p. 156.

15. Alvarez, op. cit., p. 597.

16. Young, *The Pastor's Hospital Ministry*, op. cit., p. 47.

chiatrist and his practice. By the same token, the psychiatrist can assure certain patients who doubt the ability of a clergyman to help them that the latter is competent and that his ministry may be just what they need.

However, even though there is a necessity for cooperation, it is still true that the psychiatrist and the pastor move in significantly different orbits. Each has his own bailiwick, his own forte. But this does not represent a threat to cooperation. Rather, the understanding of this fact may do much to enhance it.

Leo Alexander, in a most interesting manner, differentiates the roles of pastor and psychiatrist. He puts it:

"I may perhaps, more clearly define the role of the church and the role of the psychiatrist by comparing the churchman to the department of agriculture and the psychiatrist to the local plumber in enabling a farmer to irrigate his fields. In the complex general problem of satisfactory irrigation, the department of agriculture is of vital importance in the operation of this project. However, if irrigation breaks down because roots have plugged the main waterpipe, the plumber can restore the flow of water without invoking the aid of the department of agriculture. Hence it should be obvious that religion and psychiatry, while capable of a comfortable coexistence, function on separate levels; religion on the higher plane, psychiatry on the lower plane."¹⁷

Thus comprehending the different roles each plays, cooperation is all the more possible and the more intelligent.

What the psychiatrist seeks to do in the case of the patient with mental disturbance is often better understood than what the clergyman has to offer. Consequently, the improved cooperation between psychiatrist and pastor may well hinge on the insights of both as to the role of the pastor. Because of this we will spend most of our time in this section attempting to come to a comprehension of that role.

One phase of the minister's service is that of **preventing** mental illness, or where such illness already exists, preventing its complication. Much of what the pastor does is aimed at bringing stability to individuals, and at helping them relate meaningfully to others and to their God. When such is achieved, a great deal will have been done to prevent emotional illness or its becoming more serious. Lewis Wolberg, a psychiatrist, endorses this when he says that because of the many problems which are brought to him, the minister, "is thus in the strategic

position to practice preventive mental health when such problems are brought to his attention."¹⁸

Wolberg further claims that because of the pastor's being a person with a measure of prestige for some people, he is able to bring much-needed consolation to them in difficult times. This too becomes a facet of the minister's role in serving the mentally disturbed. Wolberg states:

"Traditionally the minister has served as a resource to which the individual may run whenever he is encountering difficult problems in living. The solace the sufferer receives from such consultation may be great, due in part to the unique prestige the minister occupies in the mind of the average individual."¹⁹

Since Wolberg wrote those words in 1954, the public image of the clergyman has sagged rather noticeably, but what he says may still be true for those who respect the office of the minister.

Furthermore, being who he is, the pastor has the opportunity to move into situations where help may desperately be needed. Such an open door does not exist by and large for the psychiatrist. But the pastor moving within his particular sphere is usually able to step into a case without seeming to be obtrusive and establish a contact with the one who needs help. Psychiatrist Jack Ewalt affirms this by saying:

"Preachers and school teachers have more authority to go into people's homes uninvited and unwanted than anybody else. Doctors can't do this, a lawyer can't, a police officer can't, but a preacher can. Somehow they get away with this kind of thing. A chaplain very often can involve himself in a situation you're worried about, and be looked upon as doing his duty, whereas you'd be nosy if you tried it. I think working out a liaison with them sometimes would help."²⁰

In being allowed to step into people's lives in this unique way, the pastor is granted the opportunity to render a signal service to the mentally disturbed person and to the psychiatrist who collaborates with him.

All of this leads us very naturally into another phase of the minister's role, that of recognizing that medical and psychiatric treatment is indicated and bringing the person to submit to such. Even though the vast majority of clergymen are not equipped to deal with seriously disturbed persons, they should be sufficiently knowledgeable to be able to detect

18. Lewis R. Wolberg, *The Technique of Psychotherapy*, New York: Grune & Stratton, 1954, p. 127.

19. *Ibid.*, p. 126.

20. Jack Ewalt in Gene L. Usdin's (editor), *Practical Lectures in Psychiatry for the Medical Practitioner*, Springfield, Illinois: Charles C. Thomas, 1966, p. 60.

17. Leo Alexander in Iago Galdston's (editor), *Ministry and Medicine in Human Relations*, New York: International Universities Press, Inc., 1955, pp. 82, 83.

the presence of inner conflicts in the people to whom they minister.

Florence Powdermaker, still another psychiatrist, says this of the clergyman, "He will recognize also the need for psychiatric treatment and those situations in which clergyman and psychiatrist may work together for the rehabilitation of the individual."²¹ The psychiatrist is not expecting too much of the clergyman when he believes that the latter should be able to read the signs which indicate an unhealthy or even a dangerous mental condition.

Wayne Oates suggests that the pastor occupies a strategic position in the detection of mental illness because so frequently people afflicted with such come to the pastor's attention first of all. He asseverates:

"The parishioner who is manifestly psychotic needs medical help . . . these persons quite often come to the attention of a minister before they go to a doctor. If a person is threatening suicide, if he is dangerous to the personal safety of other people, if he is not amenable to reason but is deluded and irrational, or if he shows any of the less obvious signs of mental disease, he needs the care of a doctor."²²

And we might add that such persons should be referred to a doctor (psychiatrist) with all due dispatch. The disturbed person may take umbrage at the pastor's suggestion that he should see a psychiatrist, but the urgency of the situation militates against any reluctance.

It is precisely at this point of referral that the pastor fulfills yet another phase of his role. Not only does the psychiatrist appreciate the referral of mentally ill persons, but the fact that the clergyman is doing the referring also greatly facilitates matters for the patient. Granger Westberg states this effectively, "The ordeal of making an appointment, when handled by his friend the minister, does not seem quite so dreadful as he had anticipated."²³ And without the pastor making the referral and appointment, the patient might easily postpone the matter for a tragically long time.

Just as the pastor can meet a crucial need in the early detection of mental illness and prompt referral to a psychiatrist where such is indicated, so he can also do much, in cooperation with the psychiatrist, when the patient returns from the hospital. The pastor can, among other things, give the patient confidence

concerning the love and acceptance which he will find upon his dismissal. The experience of re-entering the community is for some mental patients a traumatic one, but the pastor's ministry can be greatly supporting and may do much to allay the anxieties.

Young accentuates the desirability of cooperation between psychiatrist and clergyman at this point:

"Cooperation between the minister and the psychiatrist can be especially valuable when the patient is released from the hospital and returns to his community. A brief note from the psychiatrist to the patient's pastor concerning the individual's abilities and needs with regard to his adjustment process will be helpful."²⁴

Part of facilitating the return from the hospital involves the pastor's ministry to the family of the patient. Unless the family understands something of the nature of the illness, as well as the extent of the recovery, it may be difficult for the patient and his family to find a proper adjustment. Without that adjustment, many of the benefits of psychotherapy may be vitiated. Thus the psychiatrist will welcome the pastor's aid in interpreting to the relatives of the patient what has occurred in the latter's life in recent months (or years), and in emphasizing how imperative it is that a meaningful relationship exist between the patient and his family.

Hiltner focalizes all of this and adds a few more dimensions as he says:

". . . the minister can almost always carry on constructive work with the relatives. People so frequently think of a mental illness as a family disgrace; and if the minister does no more than change that attitude, he has accomplished much. He may remember that there have been factors of interpersonal relationships involved in the causation of the difficulty; and he may use the crisis constructively to help change the human environment in which the trouble has developed. Sometimes the relatives may be helped to change their attitude toward the patient, to understand him better."²⁵

We have marshalled considerable evidence to support our claim that the clergyman has a vital role to fulfill as he and the psychiatrist cooperate to meet the needs of the mental patient. It has been observed that there are times when the minister has certain advantages because of his office, such as his unique opportunities to offer solace to disturbed persons and to enter uninvitedly into exigent situations.

But the minister also faces certain obstacles to effective service because of what he is. O. Spurgeon English and Gerald H. J. Pearson,

21. Florence Powdermaker in Paul B. Maves', **The Church and Mental Health**, New York: Charles Scribner's Sons, 1953, p. 39.

22. Wayne E. Oates, **The Christian Pastor**, Philadelphia: Westminster Press, 1951, p. 143.

23. Granger E. Westberg, **Minister and Doctor Meet**, New York: Harper & Row, 1961, p. 120.

24. Young, **The Pastor's Hospital Ministry**, op. cit., p. 50.

25. Hiltner, op. cit., p. 157.

both physicians, point out the dilemma faced by every minister when he of necessity assumes a definite position on certain issues. They say, "Pastoral counseling is not an easy skill to acquire or practice. It is difficult, for instance, for a minister to take a definite stand on moral issues from the pulpit and then take a non-judgmental role in his study to meet the needs of a given case."²⁶ Every sensitive minister has been cognizant of this complication, and as much as he might desire it, there seems to be no way to be extricated from it.

Another continuing problem faced by almost every minister, as by every physician, is that of time limitations. Because of the myriad of demands on the time at his disposal, the careful clergyman realizes that he can devote only so many hours to counseling (with the mentally ill and a host of others), and if he violates that time allotment too frequently the remainder of his ministry will suffer.

Consequently, the pastor must be cautioned against becoming involved in counseling with the emotionally disturbed if he knows at the outset that he will not be able to do justice to the task. Dallas Pratt, himself a psychiatrist, has good advice for the clergyman in this connection. He notes, "Counseling with people in emotional distress requires time. In order to avoid starting something he is unable to finish, the pastor will have to estimate the time he has available for counseling, and at least partly base his referral policy and depth of counseling on this."²⁷

Let us assume for the moment that the pastor is determined to cooperate with the psychiatrist in any way that he can (something which has not always been true). Even in this instance, he will need the help of the psychiatrist if he is to be a valuable addition to the healing team. Sander Rado, psychiatrist at Columbia University, speaks of the duty of his profession in this regard:

"If we psychiatrists make the fundamentals of psychodynamics available to the minister, he will be better equipped to help the parishioner who comes to him for help. Among those who come to the minister, there will be individuals suffering from serious mental pathology. These individuals are actually or potentially dangerous to themselves, to the minister, and to the entire community. We must help the minister to detect these

individuals, and to turn them over to a psychiatrist. They urgently need psychiatric treatment, if not custodial care."²⁸

We think it can be said without fear of refutation that those clergymen who are sincerely interested in being associated with psychiatrists and physicians on the healing team will welcome all the assistance which the psychiatrists see fit to render.

With an audible sigh of relief and with a deep felt gratitude, we can assert that in our day there is a great deal of cooperation between clergymen and psychiatrists as they both seek to serve the emotionally disturbed patient. The former bastions of distrust and skepticism are one by one inexorably being leveled. In many quarters today, there is a mutual respect and confidence such as may not have existed at any time heretofore.

Speaking for the clergy, we know this to be true. And apparently it is also true for large numbers of psychiatrists. Leslie E. Moser, himself a psychologist, has this to say, "The majority of psychiatrists recognize contributions made by religion to mental health and the treatment of the mentally ill, and they demonstrate a high degree of warmth and acceptance toward the clergy."²⁹ He goes on to elaborate:

"Contact between clergymen and psychiatrists is much more common than between clergy and other psychological practitioners, inasmuch as both are often required to attend the parishioner and his family during periods of severe mental illness. For this and other reasons, the clergy and psychiatrists have developed mutual interests and cooperative attitudes."³⁰

And before we leave this discussion, we heed the remark of Wolberg. "That no real disparity need exist between psychiatric knowledge and religious belief is often pointed out. It is said that the goals of psychiatry and of religion are similar, both striving to help people to achieve satisfactory and meaningful lives."³¹

The urgency and logic of collaboration between psychiatrist and minister as both strive to serve the mentally ill patient has been sufficiently considered. It is our observation that many individuals in both professions are increasingly anxious to have that cooperation actualized.

26. O. Spurgeon English and Gerald H. J. Pearson, *Emotional Problems of Living*, New York: W. W. Norton & Company, Inc., 1963, p. 597.

27. Dallas Pratt in Maves', *The Church and Mental Health*, op. cit., p. 208.

28. Sander Rado in Galdston's, *Ministry and Medicine in Human Relations*, op. cit., pp. 33, 34.

29. Leslie E. Moser, *Counseling, A Modern Emphasis in Religion*, Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1962, p. 23.

30. Idem.

31. Wolberg, op. cit., p. 127.

THE PSYCHOSOMATIC PATIENT:

Our next major concern is in reality not far removed from the one we have just left. The person we now confront is another who by the nature of his case challenges the physician and the clergyman to act cooperatively. This patient is obviously ill, but his ailment appears to be only functional, not organic. In esoteric jargon, this individual is suffering from a psychosomatic condition.

As we begin this discussion, let us first of all seek to establish a definition of this term, "psychosomatic." Roy Grinker and Fred Robbins, both physicians, offer the following as one definition. They succinctly say, "The term **psychosomatic** implies a conceptual approach in which mind and body are considered as integrated forces in the organization of function and in the disorganization of disease."³²

Max Hamilton and D. R. MacCalman, likewise physicians, in their definition stress the distinction between organic and functional disorders. They offer this:

"One of the great developments in medicine . . . was the concept of the differentiation between 'organic' and 'functional' conditions. All disease is a disturbance of function, but in the former it was possible to demonstrate the presence of damage to the organ sufficient to account for the symptoms. The concept of organic damage was later extended to include changes in the chemistry of the body. The functional disorders were defined as those in which no lesions were to be found in any organ and no other objective changes, other than the primary ones, could be demonstrated."³³

We consider these two statements to be adequate for our present purposes.

The terminology in psychosomatic medicine is of rather recent origin. But many of the concepts and practices in this field are unquestionably ancient. Alvarez points out, "Psychosomatic medicine is nothing new. Probably 100,000 years ago it was being practised by the witch doctors of the Old Stone Age in the efforts to convince their patients that the demons of disease had to be driven out of them, and hence recovery was at hand."³⁴ David Cayer, another doctor, says much the same, "The term 'psychosomatic medicine,' while of recent origin describes an approach to medicine as old as the art of healing itself."³⁵

Grinker and Robbins, writing in 1954, expand on the newness of the expression, "psychosomatic." They assert:

"The term **psychosomatic** was formally introduced into the medical sciences about fifteen years ago with the establishment of a special journal and later a society bearing that name. Previously it had been used occasionally in somewhat different context, but more frequently in reversed form as **somatopsychic**. These conceptual terms fuse mind and body into a comprehensive unity within which any function or disease of one is associated with changes in the other."³⁶

Meanwhile Eric Wittkower and R. A. Clegghorn emphasize the newness of psychosomatic medicine as a field of research. They contend, "The history of medicine shows that the psychosomatic approach is not new. As a field of research psychosomatic medicine has gained coherence and momentum only during the last twenty years."³⁷

All of this stands as considerable evidence to support our initial statement that even though the term, "psychosomatic," may be new, the actual practice of at least something like psychosomatic medicine is not new.

With the rather recent introduction of the nomenclature presently in usage, psychosomatic medicine gained a previously unknown emphasis. But the increased concern with this subject was also due in large part to the interest which the layman was beginning to exhibit. Flanders Dunbar, writing in 1948, noted, "Until two or three years ago the psychosomatic approach to clinical and research problems was a hobby in which some of the confreres indulged. Suddenly the practicing physician found one or many of his patients expecting him to be familiar with this new field."³⁸ Consequently, because of newer insights into the interdependence of body and mind, and because of the unprecedented professional and laical popularization, psychosomatic medicine has rather recently come into the spotlight.

It is most obvious that to ascertain which disorders are organic and which are functional may be extremely difficult. But probably no practicing physician would deny the fact that his waiting room is frequently occupied by patients whose primary problems are of a functional nature.

32. Roy R. Grinker and Fred P. Robbins, **Psychosomatic Case Book**, New York: Blakiston Company, Inc., 1954, p. v.

33. Max Hamilton and D. R. MacCalman, **Psychosomatics**, New York: John Wiley & Sons, Inc., 1955, pp. 1, 2.

34. Alvarez, *op. cit.*, p. 23.

35. David Cayer in Young and Meiburg's, **Spiritual Therapy**, *op. cit.*, p. 9.

36. Grinker and Robbins, *op. cit.*, p. 3.

37. Eric D. Wittkower and R. A. Clegghorn (editors), **Recent Developments in Psychosomatic Medicine**, Philadelphia: J. D. Lippincott Company, no date, p. vii.

38. Flanders Dunbar, **Synopsis of Psychosomatic Diagnosis and Treatment**, St. Louis: G. V. Mosby Company, 1948, p. 17.

Psychosomatic disorders take a great variety of forms. But some ailments seem to be more consistently functional than others. Psychiatrist Harry Stack Sullivan says, "Notorious in this field at the moment are the gastric-ulcer syndrome, so called, certain disturbances of lower bowel function, some cases of asthma and hay fever, a few cardiac disorders, and so on."³⁹

In the treatment of most illnesses and especially psychosomatic ones, the majority of physicians have come to see that man must be seen within the entire context of his environment. To attempt to treat most disorders by considering the symptoms alone will lead only to an impasse. **All** ailments and **especially** those which are not primarily organic must be diagnosed within the framework of the patient's entire experience.

Dunbar moves along these same lines when he says:

"The physician is beginning to realize that in the diagnosis and treatment of any illness, it is essential to include both physiological and psychological diagnostic methods against the background of the cultural environmental group with which the patient is struggling: in other words, the living structure of the patient's own society."⁴⁰

Hamilton and MacCalman likewise emphasize the importance of considering the patient's environment:

"The psychosomatic disorders can only be understood in terms of the interaction of the individual with his environment. This, in the case of man, means his social environment. The latter is as important as the former. Attempts to deal with the individual, abstracted from his environment, can therefore only deal with one aspect of the problem, and even that only in an abstract manner."⁴¹

We reiterate that such considerations are important in the diagnosis and treatment of practically every ailment, but **particularly** paramount when confronted by functional disorders. This contention, we believe, has been adequately substantiated.

Since it is true that so many patients coming to the physician are suffering primarily for psychosomatic reasons, many doctors believe that someone must come to their assistance. The sheer numbers, as well as the complexities, of psychosomatic cases leave many physicians feeling both frustrated and desperate. Dunbar speaks for many of his fellow physicians when he states, "And most general practitioners have

become aware of their inability to cope with the majority of problems presented to them by their patients."⁴²

In similar fashion, William F. Sheeley speaks of the need for help felt by the physician who finds himself treating patients whose fundamental disturbance is emotional. He claims:

"Emotional disorders stem from an involved interaction of social, economic, psychological, and physiological forces, which interaction is of great concern to the family physician. Hence, he needs in his community efficient organizations and persons that will foster the care of emotional disorders."⁴³

It might seem that Sheeley's comments ought to have been considered in our section dealing with the mentally ill. But Sheeley writes all this in a book entitled, **Psychosomatic Medicine**. Hence we consider his statement to be germane to our present discussion.

As Sheeley pleads for organizations and persons that might come to the support and aid of the physician, he does not specifically mention the church or the clergy. In spite of that omission, it can safely be said that many doctors do look to the minister as one who can furnish them with assistance in bringing healing to those who suffer psychosomatically. David Belgum avers that doctors are opening the door to the clergy because medical theory is no longer "confined to the more purely physiological, chemical, or bacteriological frame of reference. . . . Modern medicine is concerned about the whole person and thus naturally overlaps with concerns of religion."⁴⁴

More and more physicians are coming to see that the pastor can serve as a vital member of the healing team, and especially so in the case of the psychosomatic patient. Bonnell believes, "Many physicians recognizing the presence of non-physical factors in illness also freely acknowledge that faith in God and the healing forces which it releases in the individual may be the physician's most powerful ally."⁴⁵ The fact that the clergyman is being seen as the physician's ally and not his antagonist represents a trend which has rather recently come to the fore.

Westberg is another who argues persuasively for the cooperation between doctor and pastor in the case of the psychosomatic patient:

42. Dunbar, *op. cit.*, p. 17.

43. William F. Sheeley in John H. Nodine and John H. Moyer's (editors), **Psychosomatic Medicine**, Philadelphia: Lea & Febiger, 1962, p. 942.

44. David Belgum, **Clinical Training for Pastoral Care**, Philadelphia: Westminster Press, 1956, p. 17.

45. John Sutherland Bonnell, **Psychology for Pastor and People**, New York: Harper & Brothers, 1948, p. 155.

39. Harry Stack Sullivan, **The Psychiatric Interview**, New York: W. W. Norton & Company, Inc., 1954, p. 205.

40. Dunbar, *op. cit.*, p. 19.

41. Hamilton and MacCalman, *op. cit.*, p. 214.

"Could it be that the doctor is seeing hundreds of people in his office who are actually in spiritual distress but who have not done anything about it until the distress finally expressed itself in physical symptoms? The doctor obviously would prefer to get to the cause of the problems which are presented to him. This is one of the real reasons why ministers and doctors ought to develop a close working relationship. If it is true that a large proportion of the physician's patients are basically suffering from spiritual distress, why not track the symptoms down to their real source? If ever a team approach is required in helping people it is in unraveling the psychological problems of functional illness."⁴⁶

W. L. Northridge seemingly goes even further in accentuating the role which the pastor plays in bringing recovery to the functionally ill:

"The major symptoms of an anxiety-neurosis may, however, be physical rather than psychological. . . . Doctors without psychological training sometimes treat these symptoms without seeing that they are related to a disturbed condition of mind. Obviously the way to attack the symptoms is by helping the patient to resolve his conflicts, whatever these may be. And the minister ought to be in a better position than the majority of doctors to render such help."⁴⁷

Whether or not he occupies that "better position" might be a moot point, but we concur with his basic proposition that the minister with any expertise at all ought to be able to bring considerable help to the patient whose illness has been precipitated by emotional upheaval. We look on such a patient as representing an exceptional opportunity for the doctor and clergyman to collaborate and to complement each other's work.

Speaking as one doctor, Cayer welcomes the competent minister to such a working relationship. He expresses it thus:

"It is not possible except in rare instances for the busy physician to minister to his patient's organic as well as emotional and spiritual needs. Under such circumstances the medically oriented and trained clergyman is assuming his right and proper place as a member of the healing team. As a consultant for the sick and failing spirit he performs a function as necessary and valuable as that of the other specialist called upon to add to a patient's understanding and comfort. To those of us to whom this valuable service is constantly available the art and practice of medicine has been made infinitely more effective and rewarding."⁴⁸

Belgum likewise touches on the welcome which awaits many clergymen. This will follow, he says, a recognition of the emotional factors in illness and an appreciation of the healing resources found in the Christian ministry. Such

"can make the pastor a welcome member of the health team and increase the amount of referral made to him."⁴⁹

It might well be that most physicians would choose to refer their psychosomatic patients to a psychiatrist. There can be no disputing the fact that many such patients could be helped considerably more by a psychiatrist than a clergyman. But there are at least two obstacles to referring all these patients to a psychiatrist. Westberg points these out to us:

"The physician often considers the possibility of referring this type patient to a psychiatrist. This is a logical step but it has two barriers. First of all, many people are not willing to go to a psychiatrist because they do not think of him as working with normal people. Then too, there are not enough psychiatrists to meet the needs of all troubled people. In fact, there are large areas of the country which do not have even one psychiatrist."⁵⁰

Because such is the situation which obtains, as Westberg goes on to say, many physicians have begun to turn to the clergy for counseling the functionally ill.

We believe we have shown conclusively that in the case of the psychosomatically ill person, there is great room and reason for cooperation between pastor and doctor. In this type of patient especially, there is a great deal of duplication in methods and interests. How nonsensical then for clergyman and physician to proceed as though the other did not exist or had nothing to contribute.

We terminate this section of our paper by hearing the testimony of Young and Meiberg as they speak of the closeness of function and purpose of doctor and pastor:

"There is no sharp line of demarcation between body and mind and spirit. In fact, neither exists as an entity except in relation to the others. For this reason there can be no mechanically simple definitions of function between the doctor and the minister. There must necessarily be overlapping when each is using the same set of facts in personality background. Thus, the common meeting ground of the doctor and the minister is in the middle of the emotional and spiritual life of the individual."⁵¹

The fact that such a foundation for cooperation exists does not really surprise persons in either profession, and yet this is a fact which has often been shunted aside and forgotten. It is our desire that as both clergy and physicians come to the realization and acceptance of this fact, more actual cooperation will be effected.

46. Westberg, *op. cit.*, p. 53.

47. W. L. Northridge, *Psychology and Practical Practice*, New York: Pastoral Psychology Book Club, 1953, p. 35.

48. Cayer in Young and Meiburg's, *Spiritual Therapy*, *op. cit.*, p. 10.

49. Belgum, *op. cit.*, p. 16.

50. Westberg, *op. cit.*, p. 117.

51. Young and Meiburg, *op. cit.*, p. 161.

THE ALCOHOLIC PATIENT:

Our attention is now to be fixed on another patient with whom both doctor and minister are well acquainted. We mean the alcoholic. Because of the physical, emotional, and spiritual factors involved in dipsomania, physician and pastor are once again faced with an opportunity to consult and collaborate.

In bygone generations, many clergymen were convinced that the individual suffering from alcoholism was more the victim of sin than sickness. But this attitude no longer predominates. Today alcoholism is recognized primarily as a disease, an emotional disturbance. Because it is precisely that, knowledgeable ministers are now satisfied that a team approach to the problems of the alcoholic is mandatory.

A recognized authority in the field of counseling the alcoholic is Howard J. Clinebell, Jr. He speaks of the psychiatric-medical-pastoral co-operation needed in the case of the alcoholic:

"Alcoholism is a complex disease. A 'team' approach is often necessary in its treatment. The pastor should think of himself as one member of the team with important functions, one of the most essential of which is relating the alcoholic who comes to him to the members of the team who can help him most. If the alcoholic needs intensive psychotherapy, he will refer him to the trained psychotherapist. If the minister suspects that he has physical complications, he will call on the resources of the physician. (In any case he will encourage the alcoholic to have a physical check-up by a physician who understands the biochemical problems involved.)"⁵²

The clergyman will do well to bear in mind Clinebell's last point, *i. e.*, the matter of a physical check-up. Ministers often fail to realize that the physical condition of the alcoholic is greatly deteriorated. Not only has the alcoholic intake impaired his over-all physical well-being, but he may very likely also be suffering from malnutrition. And furthermore, as he proceeds in his attempts to conquer his illness, he will need a physician to observe what is happening to his body because of the withdrawal of alcohol.

Clinebell amplifies this point when, in speaking of the alcoholic's serious physical condition, he says:

"In such cases hospitalization may not only lay the groundwork for other therapies, but it may even save lives. An alcoholic who is coming off a protracted binge may suffer severe, even fatal, withdrawal symptoms (when alcohol is removed) unless he is given medication."⁵³

Thomas J. Shipp also speaks of the advisability of medical attention. He states, "I think it is

always important if at all possible for the alcoholic to see a medical doctor, preferably a doctor who understands and is interested in the treatment of alcoholism."⁵⁴

Clifford J. Earle concurs in all of this and then goes on to stress the fact that medical treatment is often preparatory for other therapies. He believes:

"Medical attention is usually required in the acute stages of alcoholism, when the victim has been drinking heavily for several days. . . . Medical therapy does not propose to cure the alcoholic. Its purpose is to sober him up, get the alcohol out of his system, and repair some of the damage done to his body by excessive drinking. . . . Its great value is in preparing the patient, both mentally and physically, for further programs of recovery and rehabilitation."⁵⁵

And finally in corroboration of this point, we submit the testimony of Ernest A. Shepherd:

". . . the excessive drinker should start with medical care. . . . since there are always the possibilities of complications in a case, and since an alcoholic must be sober and in a fair degree of physical health for other care to have its best opportunity, the first step is medical care."⁵⁶

It is expedient that we consider briefly why such medical treatment is so obligatory in the case of many alcoholics. When the clergyman understands what has happened and is happening to the body of the alcoholic, he will no longer hesitate to call upon the services of a physician.

Fritz Kant, a doctor, initiates this phase of our discussion by saying that medical care may be the most important aspect of the alcoholic's treatment during the first few days. This is true, he claims, because, "What the alcoholic is mainly suffering from at this stage is avitaminosis and in advanced cases other metabolic disturbances and dehydration."⁵⁷

On this same note of vitamin deficiency, Earle says:

"An almost universal need in the treatment of alcoholics at this stage is vitamin replacement. A concomitant of nearly all prolonged heavy drinking is vitamin deficiencies due to the fact that the drinker is more interested in alcohol than in food. Proteins and liver extract are usually required. The treatment often includes the administration of glucose. Insulin and oxygen are used as needed."⁵⁸

Kant as a physician prescribes in greater detail the treatment indicated to effect an amelioration in the alcoholic's physical condition:

54. Thomas J. Shipp, **Helping the Alcoholic and his Family**, Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1963, p. 63.

55. Clifford J. Earle, **How to Help the Alcoholic**, Philadelphia: Westminster Press, 1952, pp. 36, 37.

56. Ernest A. Shepherd in J. Richard Spann's (editor), **Pastoral Care**, Nashville, Tennessee: Abingdon-Cokesbury Press, 1951, p. 180.

57. Fritz Kant, **The Treatment of the Alcoholic**, Springfield, Illinois: Charles C. Thomas, 1954, p. 62.

58. Earle, *op. cit.*, p. 37.

52. Howard J. Clinebell, Jr., **Understanding and Counseling the Alcoholic**, Nashville, Tennessee: Abingdon Press, 1956, p. 177.

53. *Ibid.*, p. 188.

"If the alcoholic can not even tolerate fluids, then intravenous infusion of a 5 per cent glucose solution in saline is in order. This may be accompanied by small doses of regular insulin. . . . Usually forcing of fluids with fruit juices and milk orally will be possible to combat the dehydration. In every case vitamins will be given immediately to achieve a rapid effect by injection, 50 mg. of B₁ (Thiamin chloride) and nicotonic acid, and 100 mg. of vitamin C (ascorbic acid) three times a day is an adequate dosage."⁵⁹

Another of the problems which not infrequently plagues the alcoholic seeking a cure is that of delirium tremens, the experience of which is agonizing. Northridge gives us a brief definition of it, "The condition known as 'delirium tremens' is due to the sudden removal of drink from a chronic alcoholic. It is an acute toxic psychosis, or it may be the climax of a prolonged period of excessive drinking."⁶⁰

Obviously such a person needs more than pastoral care. He desperately needs medical attention. Kant believes that since the patient with delirium tremens is suffering from serious dehydration (completely the reverse of former concepts which held that the patient **needed** further dehydration), fluids need to be administered.⁶¹ He also believes that a valuable treatment in the case of the delirious patient involves the use of the adrenocorticotrophic hormone ACTH. "This is of special importance for the practitioner who is treating the patient in a general hospital."⁶²

Clinebell gives us further insight into endocrine therapy, not only for the treatment of delirium tremens:

"Studies at Bellevue have shown that disturbances or deficiencies of the pituitary-adrenal-gonadal triad of endocrine glands are present in many alcoholics. Therapy-wise these findings are most significant. Treatment using hormones of the pituitary and adrenal glands results in the diminishing of the craving for alcohol, according to Smith. ACE (adrenal cortical extract) was used to control 'within twenty-four hours' acute alcoholic intoxication, alcoholic hallucinosis, and delirium tremens. Endocrine therapy is now widely used as means of treating potentially fatal conditions arising from extreme and prolonged excess."⁶³

Earle also has something to say about this form of treatment:

"In a number of clinics and treatment centers doctors are now employing endocrine therapy with very good results. This approach involves the use of adrenal cortex extract (ACE) and related drugs. . . . The agony and shock of the hang-over have been

greatly reduced, and the organic functions of the body restored to normal in a matter of hours."⁶⁴

Very recently, significant and often successful results have been obtained in treating alcoholism by means of the drug LSD. Patently, this drug must be administered under the most meticulous medical supervision possible.

Before we leave this consideration of the medical therapy involved in the alcoholic case, we take note of what Earle has to say about what is called an aversion technique. This treatment he describes as follows:

"A new drug that offers interesting possibilities in alcoholic therapy is tetraethylthiuramdisulphide (TETD), generally known by its American trade name, Antabus. . . . The presence of Antabus in the system produces an allergy-like sensitivity to alcohol. The drug itself causes no reaction, but after taking it a person cannot drink without extremely unpleasant consequences. . . . Antabus should always be used in minimal amounts as prescribed by a qualified physician. . . . The use of Antabus appears to be limited to persons who are in good physical and mental condition. . . . Antabus is not a cure for alcoholism. It does not remove the urge to drink. But in many cases its use can open the way for other therapies that get at the root of the trouble."⁶⁵

All of this evidence, along with the simple logic of medical attention for the alcoholic, is more than sufficient to convince us that the clergyman ought to work very closely with the physician as he seeks to minister to the alcoholic. In many cases, the minister can do nothing until adequate medical care has been given.

The minister who is intent upon helping the alcoholic will realize that in frequent instances he will need the assistance of other professional persons. But at the same time, the minister must be on guard against a quick and easy referral which gets the alcoholic off his counseling list and salves his conscience at the same time. There are some things which the pastor can do for the alcoholic which no one else can do quite as well. The clergy will do well to heed Shipp's warning: "If a minister 'routinely' refers such troubled people to other agencies he deprives those persons of a chance to benefit from his help, the help which the clergyman and the church are in the best position to give."⁶⁶

This brings us face to face with the peculiar role of the clergyman. We have seen that the physician has a great involvement in the treatment of the alcoholic. But what can the minister contribute?

59. Kant, *op. cit.*, pp. 62, 63.

60. Northridge, *op. cit.*, p. 65.

61. Kant, *op. cit.*, p. 64.

62. *Ibid.*, p. 65.

63. Clinebell, *Understanding and Counseling the Alcoholic*, *op. cit.*, p. 41.

64. Earle, *op. cit.*, p. 37.

65. *Ibid.*, pp. 38, 39.

66. Shipp, *op. cit.*, p. 50.

In answer to that question we turn first to the opinion of a well-known physician, Marvin A. Block. From 1954-1964, he served as chairman of the American Medical Association's Committee on Alcoholism. He has this to say about the function of the minister:

"Religion plays an important part in the treatment of any disease. The faith of the patient is a factor that cannot be discounted in any illness. The patient's faith has a very definite effect on his physiology. The hope his faith gives him seems to help the physiological processes and builds greater resistance in his body. Often the patient who is sick and has no hope will succumb more rapidly than the one who has hope and a desire to live. It is no different for alcoholism. It is here that the clergyman can play his greatest role—to renew in the individual patient his faith and desire to live, to convince him that he is wanted and loved, and that there are people who care."⁶⁷

The emphasis here is on rekindling the patient's faith and on reassuring him of his being loved and wanted.

Earle recommends a conversation with the pastor for three reasons. In them we find further facets of the role of the clergy:

"Our talk with the minister will have three results. First, we will find in the interview a release from our emotional tensions. Our feelings of frustration, guilt, resentment, anger, fear, and hostility, all mingle to create this tension, and they must be talked out if the tension is to be relieved. Secondly, as we talk, we shall begin to have new insights and understandings about our problem. Our thoughts will become clearer. We shall begin to see our situation from the outside. Thirdly, the counselor will give us some guidance, mostly by quiet suggestion, in handling our responsibilities and in dealing with situations as they arise. He will put us in touch with further resources."⁶⁸

Each of these reasons is a valid one, to be sure, but it seems to us that the second one is particularly crucial. The alcoholic has in most cases turned to alcohol as a technique to escape the problems and burdens of life. In alcohol, he finds, or so he thinks, at least a temporary release from reality. It is apparent then that he needs to discover a more realistic perspective on his problems and more satisfactory coping techniques.

Shipp agrees with this by saying that the minister can be highly instrumental in improving the patient's whole outlook on life and reality:

"The most important factors in the rehabilitation of such a person are the improvement of his basic outlook on life and his ability to cope with reality through an improved morale. The chances of bringing about such changes are in direct ratio to the stimula-

tion of his mental, physical, and spiritual health. All of these are dependent upon spiritual values. It is precisely in this area that the trained clergyman can make a contribution."⁶⁹

Shepherd adds another role to the many which the pastor can play. He suggests that the clergyman, probably more than any one else, can help the alcoholic to see that he needs care. He supports this by saying, "Not only are friends and families of alcoholics too close to the individual and too identified with the alcoholic's problems to help; the addict is too disturbed to respond to appeals."⁷⁰ It might seem that this is a rather insignificant contribution on the part of the pastor. But to convince the alcoholic that he needs help and to assure him that such help is available are often fundamental steps toward recovery. Hence if a minister can accomplish such, he will have rendered no little service.

There is indeed much that a minister can and ought to do in the case of the alcoholic. But a great deal will depend on his own approach to the problem of alcoholism. If he considers the alcoholic a worthy subject for castigation and excoriation, then he will be largely ineffectual in ministering to him. If, on the other hand, he has a genuine compassion for the alcoholic and an intelligent comprehension of the problem, he will be sought out for help. The alcoholic needs no further objurgation by the minister, for he has often enough and severely enough flayed himself.

Having considered this much evidence, we believe there is sufficient warrant to say that both doctor and pastor have much to contribute in the case of the alcoholic. The suffering endured by the alcoholic and his family serves to educe all the scientific and spiritual insights and all the compassion and care which both physician and minister may have to offer. These two professional people can hardly be seen as in competition with each other when dealing with the alcoholic. Rather, once again, their services greatly complement each other and the need for collaboration is irrefutable.

THE SUICIDAL PATIENT:

As we come to the fourth and final phase of discussion in this paper, we meet another person who, in many cases, needs to be ministered to by both pastor and doctor. He is the individual who is determined to snuff out his own life. He confronts the physician, the psychiatrist, and the pastor and demands of them the

67. Marvin A. Block, *Alcoholism, Its Facets and Phases*, New York: John Day Company, 1962, pp. 256, 257.

68. Earle, *op. cit.*, pp. 63, 64.

69. Shipp, *op. cit.*, p. 50.

70. Shepherd in Spann's, *Pastoral Care*, *op. cit.*, pp. 173, 174.

best they individually and collectively have to render. He is confused, desperate, and distraught. He needs help and he needs it urgently.

Suicide is a matter which must be taken seriously. The statistics on suicide are simply appalling. According to Bonnell, between 250,000 and 300,000 persons commit suicide every year.⁷¹ Citizens of the United States comprise a sizeable percentage of that total. Henry Laughlin reports concerning the year 1950:

"Disregarding all of these untabulated instances, there were still a tragic total of 17,145 verified and reported cases of 'total' suicide in the United States in 1950. This gives a death rate from the reported cases of suicide alone of 11.4 cases per 100,000 population per year. This is a major medical problem. It cannot be lightly shrugged away."⁷²

We must remember that the figure 17,145 represents only the **verified** cases, and that in 1950. Taking into consideration the large number of unverified instances of suicide, as well as the increase in population, the figure for today is unquestionably higher.

Bonnell informs us that approximately 1,600 persons commit suicide every year in New York City alone.⁷³ The college years account for an unusually large number of suicides as students crumble in the face of pressure and disillusionment. Of the 209 student deaths at Yale University in the years between 1920 and 1955, suicide was the second leading cause of death.⁷⁴ Even adolescents and young children are not immune to the desire to end their own lives.

These statistics on actual suicides are distressing enough, but even more disquieting is the fact that only a small percentage of suicide attempts are successful. James A. Knight supplies the following statistics: "It is estimated that there are over 500,000 suicide attempts a year in this country with death resulting from less than 5 per cent of them, or about 18,000 to 20,000."⁷⁵ If these figures are accurate, and we have no reason to question them, then between two and three per cent of our population makes a serious attempt at suicide every year. We view this as a major concern and one which demands the joint efforts of ministers and doctors and a host of others.

There are many who agree that both the potential suicide and the one who has survived an attempt at suicide need the united services of physician and pastor. Samuel Southard is one of these. He maintains, "These patients need the attention of both a minister and a doctor. If they are on medical or surgical wards, as they gradually emerge from a state of depression they may become disturbed by feelings of guilt."⁷⁶ It is, of course, with regard to these intense feelings of guilt that the wise minister can do much.

Dicks also speaks of the desirability of cooperation between minister and doctor as he tells of the following case: "I discovered a doctor and a minister who were both trying to prevent a man from committing suicide. Each thought that he was the only one who knew of the man's trouble. United in the task through consultation together they presented a strong combination."⁷⁷

For the moment, let us look at the function of the doctor (and especially the psychiatrist) in dealing with the suicidal patient. It must be granted that there are times when the psychiatrist is the key person in preventing suicide and in treating the person who has attempted it. Rado, as a psychiatrist, indicates this in the following:

"The grave danger of severe depression is suicide. I wish it were possible to describe clearly the signs indicating that this danger is imminent; but there are no clear rules by which one can safely go. . . . When you have the feeling that your parishioner's inner onslaught on himself is more savage than he cares to reveal, your best course of action is to summon a psychiatrist."⁷⁸

Louis Linn (psychiatrist) and Leo W. Schwarz (clergyman) sound the same warning, "The suicidal person should be placed in the hands of a psychiatrist at the earliest possible moment."⁷⁹

Karl Menninger, who surely ranks as a dean among psychiatrists, speaks of the herculean aspects of treating the potential suicide. He avers:

"We doctors, who work so hard to save lives that sometimes do not seem to us to be worth saving, must also have some responsibility for the saving of these lives which are often full of promise and which are destroyed, so to speak, in a moment of impulsive bad judgment, a moment of predetermined misunder-

71. John Sutherland Bonnell, **No Escape From Life**, New York: Harper & Brothers, 1958, p. 123.

72. Henry P. Laughlin, **The Neurosis in Clinical Practice**, Philadelphia: W. B. Saunders Company, 1956, p. 425.

73. Bonnell, **No Escape From Life**, op. cit., p. 123.

74. *Ibid.*, p. 124.

75. James A. Knight, **A Psychiatrist Looks at Religion and Health**, Nashville, Tennessee: Abingdon Press, 1964, p. 99.

76. Samuel Southard, **Religion and Nursing**, Nashville, Tennessee: Broadman Press, 1959, p. 190.

77. Dicks, **Pastoral Work and Personal Counseling**, op. cit., p. 207.

78. Rado in Galdston's (editor), **Ministry and Medicine in Human Relations**, op. cit., p. 39.

79. Louis Linn and Leo W. Schwarz, **Psychiatry and Religious Experience**, New York: Random House, 1958, p. 113.

standing, like that of Romeo when he found his sleeping Juliet and thought her dead. But we cannot do it alone."⁸⁰

The Menninger Clinic in Topeka, Kansas is reputed to be most sympathetic toward the role of religion in the recovery and integration of disturbed personalities. Thus, even though Menninger does not mention the clergy as among those who stand by to assist the psychiatrist, we believe that he would welcome the competent minister to the team of those working with the suicidal person.

The minister's role in this regard may in fact be a highly strategic one. Especially is this the case regarding the prevention of suicide. Whatever he does in the way of encouraging people to have faith in God and in themselves will serve toward the averting of suicide. Bonnell states unhesitatingly, "The most powerful preventive of suicide is a firmly grounded religious faith. Such a faith exercises a stabilizing influence on character. It brings inner peace and well-being and provides available spiritual resources when the hour of crisis comes."⁸¹

While this may be true, there is also a danger that too much stock will be placed in it. Some clergymen and doctors have erroneously surmised that the person with a strong faith is not a serious suicidal threat. But countervailing that assumption is the fact that many devoutly religious persons **have** committed suicide.

Therefore, Knight's words are well-heeded, "Thus, although strong religious beliefs may act at times as a check against the suicidal impulse, we should not neglect such a person in our efforts toward prevention."⁸²

It is our position that the minister can contribute significantly to the "healing" process required by the person who is inclined toward suicide. But his contribution can be greatly enhanced if the psychiatrist will prepare the way. He can do much to assure the patient of the minister's concern and competency.

Carl Scherzer focalizes this matter for us by saying:

"The minister's ability to help him, then, will depend upon the rapport which can be established. In this case the psychiatrist may be helpful, if he is able to persuade the patient that the minister's attitude is not one of condemnation or pity (or fear or distrust). If the psychiatrist suggests that the patient

talk with his minister 'because the minister understands,' then the way is open for assistance."⁸³

This makes evident the two-way nature of the cooperation which must exist in the matter presently before us.

Knight makes the observation that the clergyman is in a position to bring considerable aid to the anxiety-ridden persons who come to him. He comments:

"When in trouble, many people automatically turn to their church for consolation and guidance. The wise pastor, counseling in his study, does much to help banish the burden of guilt, anger, and depression. The priest, through the confessional, offers God's forgiveness and a new beginning. This is a ministry of healing, and its value in restoring equilibrium to the troubled, one can estimate, is beyond measure."⁸⁴

And as in an earlier discussion, the minister may also be able to do more for the suicidal person than he has anticipated simply because of the symbolism attached to his office. Because of this, Linn and Schwarz asseverate that a clergyman can markedly affect the attitude and behavior of the badly disturbed individual:

"In any case the religious counselor, confronted with a person who harbors either suicidal or homicidal impulses, is obliged to deal with the problem of referral both promptly and sensitively. But he must not underestimate the help he can give on the spot. Despite appearances, people are often overwhelmed by feelings of helplessness and crave the guidance of someone with authority. If the religious counselor manages to communicate the special symbolic character of his position, he can influence the behavior of even a violently irrational person."⁸⁵

We stated in our consideration of the alcoholic that one of the minister's primary functions is to help the individual find a new perspective on life. This is equally true in the case of the potential suicide. In some way, the clergyman must bring the suicidal person to the place where he sees that life is eminently worth living, that he is loved and greatly needed, and that he can find the strength to carry on.

A psychiatrist verbalizes this extremely well for us. So writes O. Spurgeon English:

"After he has unburdened himself, it is up to the clergyman to point out to him where and how his attitudes can be altered with better results. He can tactfully direct the discussion toward the true meaning of life, its infinite possibilities for love, for service, for usefulness, for real personal satisfaction. The sick man, having been permitted the fullest possible expression of his personal despair, may, in the hands of a skillful clergyman and counselor whom he believes

80. Karl A. Menninger, **Man Against Himself**, New York: Harcourt, Brace & Company, 1938, pp. 14, 15.

81. Bonnell, **No Escape From Life**, *op. cit.*, p. 112.

82. Knight, *op. cit.*, p. 117.

83. Carl J. Scherzer in Simon Doniger's (editor), **The Minister's Consultation Clinic**, Great Neck, New York: Channel Press, Inc., 1955, p. 245.

84. Knight, *op. cit.*, p. 125.

85. Linn and Schwarz, *op. cit.*, p. 113.

truly understands him, slowly pick up the threads of hope and, properly nurtured, once again live a full and meaningful life."⁸⁶

The person who has survived an actual suicide attempt is ordinarily filled with a myriad of emotions, including self-reproach, remorse, disgrace, and poignant compunction. He may view himself as stigmatized and ostracized by his fellow men. We had the experience several years ago of working with an individual who had made a serious effort to end her life. We found her with each of the above-listed feelings and more. Having been an invalid for many years, she had suffered long and had often expressed the wish that her God might take her from this life. When God delayed that action, she in desperation took matters into her own hands. In talking to her after her attempted suicide, she seemed inundated by sorrow and shame. In the course of our conversations, we assured her that the patriarch Job too, in the midst of his suffering, had wished to die. But God ultimately caused him to triumph over his adversity. As far as we know, she never again attempted to take her life. She eventually died a natural death.

Dicks tells us more of the difficulty which people have in managing their lives when once they have attempted suicide:

"Many people who have tried to commit suicide and failed feel guilty about what they have done. Although they are no longer suicidal, they believe they have committed a serious sin. Of these, some feel they cannot be forgiven. A conversation with an understanding pastor will do much to reassure them. In fact, a pastoral conversation is almost routinely indicated, especially in those instances where the person has previously had a church or religious affiliation. The pastor who views the attempt at suicide as an act of a person sick of mind can be of considerable assistance in helping him to re-establish his lost sense of dignity and the meaningfulness of life."⁸⁷

Certainly the minister is in a unique position to assure the suicidal person that the feelings of guilt need not persist. If that much can be accomplished, an inestimable service has already been rendered.

So much for the minister's role with regard to the potential suicide. However, before we leave this section of our paper, we want to emphasize the importance of the suicidal threat.

This threat, as we intend to show, must not be taken lightly by either doctor or pastor.

It is often said that the person who speaks of suicide will not actually carry out the threat. But this myth is emphatically rejected by knowledgeable people in the field of suicidal research. Linn and Schwarz say very directly, "Every threat of suicide should be taken seriously."⁸⁸

There is a special danger inherent in the threat expressed by a person who has previously attempted suicide. Bonnell reports that of the nearly 20,000 suicides in the United States each year, three-fourths follow previous attempts.⁸⁹

But even if the threat does not appear to be unduly serious, there is still obvious reason for concern. The mere voicing of the threat indicates a degree of emotional disturbance. Therefore, as Laughlin says, every threat "should always be regarded seriously from one standpoint or the other."⁹⁰

It is not uncommon, when suicide is immediately threatened for both doctor and minister to rush to the scene. This seems to us to be highly advisable. The physician can administer certain medication if such is in order, and both doctor and minister can urge the value of life and the desirability of continuing it. And both, though perhaps particularly the clergyman, can point out how broken relationships might be restored and difficulties surmounted.

In the case of the potential suicide and in the case of the one who has already unsuccessfully attempted it, it is obligatory that men of medicine and religion cooperate. In a very real way, this is a matter of life and death. And all the united effort is well worth the exertion.

In concluding this paper, we express the hope that we have shown the necessity (and in some cases, urgency) of cooperation between physicians and clergymen.

The road to cooperation between the medical and pastoral professions has been at times both tortuous and strewn with obstacles. But, gratefully, with the passing of time and with an unprecedented rapprochement, the two have found that a cooperative approach is possible and essential. The welfare of the patient-parishioner demands it!

86. O. Spurgeon English in Doniger's (editor), *The Minister's Consultation Clinic*, op. cit., pp. 248, 249.

87. Russell L. Dicks, *Principles and Practices of Pastoral Care*, Englewood Cliffs, New Jersey: Prentice-Hall, Inc., 1963, pp. 126, 127.

88. Linn and Schwarz, op. cit., p. 113.

89. Bonnell, *No Escape From Life*, op. cit., p. 124.

90. Laughlin, op. cit., p. 433.

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ABSTRACT OF THE DIAGNOSIS OF ALCOHOLISM

(Presented by James W. Smith, M.D., Seattle, Washington, and
abstracted from *Western Medicine Medical Journal Special Supplement*)

In summary of an article by James W. Smith, M.D., entitled, "The Diagnosis of Alcoholism," Dr. Smith stated that investigators are increasingly becoming aware of the fact that a recognizable step-by-step progression pattern of drinking occurs in the disease of alcoholism. This progression of drinking symptoms can be observed through a series of steps, varying in the length of each noticeable step from one person to another. However, a typical drinker is seen to start his bout with the bottle as a so-called "social drinker" which merges from a merely "developmental zone" into a more "overt phase."

The drinker in his first stages perhaps begins drinking once a week and gradually not only decreases his time between drinks, but increases his intake of liquor and experiences moments of blackouts. From this stage the alcoholic soon begins to lose control, and it is not unusual for him to find reasons for weekend or holiday juicing sprees, or to find himself so obsessed with thoughts of drinking that he has a before-breakfast drink, drinks alone, and experiences tremors, an increased tolerance to alcohol, and

a decreased tolerance for his environment which threatens his rapidly approaching bottle-cushioned world.

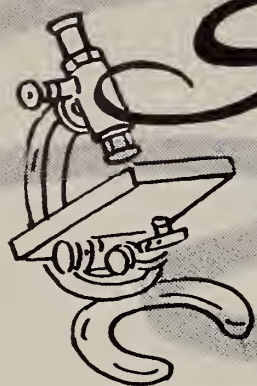
In the next stage, the "zone of deterioration," the person often begins having delirium tremens, experiences vague fears, and has a vitamin deficiency. Signs of cerebellar deterioration and muscle incoordination mount and, if unchecked by therapy and appropriate diet, lead to the final stage of alcoholism — death.

And, although Dr. Smith stated that these symptoms were the most frequently found, with a little knowledge of such alcoholism signs, perhaps you or a colleague could make a sufficiently accurate diagnosis to help someone before the damaging effects of alcoholism prevailed.

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This abstract was prepared from the *Western Medical Journal's Symposium Supplement* by Miss Michele Eichman, University of South Dakota, Vermillion, South Dakota.



Scientific

PAPER

ABSTRACT
OF

LEGAL AND COMMUNITY ASPECTS OF ALCOHOLISM

Charles Z. Smith
Judge of the Municipal Court
Seattle, Washington

The subject of Charles Z. Smith's article in the **Western Medical Journal's Alcoholic Symposium Supplement**, "Legal and Community Aspects of Alcoholism," was focused primarily on the Skid Row alcoholic. Moreover, because of his "bottom-of-the-ladder" position in our society, extensive treatment and rehabilitation programs should be expanded upon and utilized because even in the final stages of his drinking career this "police court inebriate" is not necessarily an untreatable derelict.

Social welfare services and other people-oriented services should be better coordinated with the people in the legal professions, as it is usually by the latter professions that such Skid Row alcoholics are forceably noticed and dealt with — oftentimes inadequately. Increasingly, people are becoming aware of the fact that alcoholism is an illness and should be dealt with accordingly, instead of holding the view that alcoholism is a moral, social handicap and problem dealt with by imprisonment, et cetera.

It was suggested, and indeed promoted in five states and the District of Columbia, that with a more knowledgeable concern over the alcoholic who appears before our courts, a more healthy attitude can be taken toward the behavior-problem alcoholic, and steps can be taken — if

the disciplines such as law and medicine are coordinated — to help the alcoholic become reorganized and rehabilitated instead of becoming a repeated jailbird.

E. M. Jellinek has classified alcoholism into four major types:

- (1) Alpha alcoholism; (2) Beta alcoholism, (3) Gamma alcoholism; and (4) Delta alcoholism.

Dr. Ralph G. Conner states:

(1) **Alpha Alcoholism** represents a purely psychological, continual dependence or reliance upon the effect of alcohol to relieve bodily pain or distress. The drinking is undisciplined but does not manifest **loss of control** or **inability to abstain**, social and personal damages may be limited, there are no **withdrawal symptoms**, and no signs of a progressive process. This species may go thirty or forty years without progression and is sometimes called **problem drinking**.

(2) **Beta Alcoholism** is that species of alcoholism in which such complications as polyneuropathy, gastritis and cirrhosis of the liver may occur, without either physical or psychological dependence upon alcohol, and without withdrawal symptoms. The incentive to such drinking may be social custom, such as the heavy wine consumption in France.

Abstracted from the **Western Medical Journal's Alcoholic Symposium Supplement**, by Miss Michele Eichman, University of South Dakota, Vermillion, South Dakota.

(3) **Gamma Alcoholism** is that species of alcoholism in which there is acquired increased tolerance to alcohol, withdrawal symptoms and **craving** or physical dependence, loss of control, and definite progression and behavior changes, such as described in Jellinek's earlier and widely known "phases in the development of alcoholism." Obviously, the early stages of Gamma alcoholism may resemble, or actually represent Alpha or Beta alcoholism. This species produces the greatest and most serious kinds of damage, the loss of control impairing interpersonal relations to the highest degree. **This appears to be the predominating species in the United States and Canada, and is what Alcoholics Anonymous recognizes and describes as the true alcoholic.**

(4) **Delta Alcoholism** resembles Gamma alcoholism except that instead of loss of control there is inability to abstain. There is no ability to **go on the wagon** for even a day or two without withdrawal symptoms, although the ability to control the amount of intake on any given occasion remains intact. This is the predominant species in France, the so-called **inveterate drinker** where the individual may never be drunk, but he is also never completely sober.

"An intensive program on **Current Concepts in Cardiology**, with special emphasis on coronary disease, indication and management of valvular replacement, diagnosis and management of cardiac arrhythmias, vector-cardiography and applied cardiovascular physiology. This program is being offered by the Institute for Cardiovascular Diseases at Good Samaritan Hospital, 1033 East McDowell Road, Phoenix, Arizona 85002 on January 10, 11, and 12, 1968. The meetings will be held at Del Webb's Towne House in Phoenix, Arizona. The program director is Albert Benchimol, M.D. with guest Faculty: William M. Chardack, M.D., E. Grey Dimond, M.D., Darrell D. Fanestil, M.D., Dean Franklin, George C. Griffith, M.D., Paul Hugenholtz, M.D., Albert Kattus, M.D., C. Walton Lillehei, M.D., Oscar Magidson, M.D., Alfred Pick, M.D., and Robert L. Van Citters, M.D. This is an official Postgraduate Course of the American College of Cardiology. For information about this program, write to Mr. William B. Nelligan, Executive Director for the American College of Cardiology, 9650 Rockville Pike, Washington, D. C. 20015."



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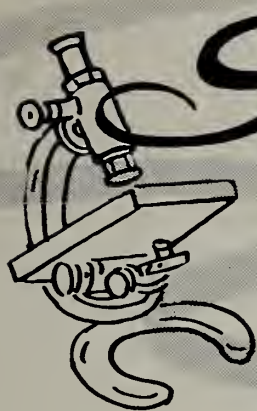
Precautions: In suspected staphylococcal infections, perform proper laboratory studies including sensitivity tests. If overgrowth of nonsusceptible organisms occurs (constant observation is essential), discontinue penicillin and take appropriate measures. Whenever allergic reactions occur, withdraw penicillin unless condition being treated is considered life threatening and amenable only to penicillin. Penicillin may delay or prevent appearance of primary syphilitic lesions. Gonorrhea patients suspected of concurrent syphilis should be tested serologically for at least 3 months. When lesions of primary syphilis are suspected, dark-field examination should precede use of penicillin. Treat beta-hemolytic streptococcal infections with full therapeutic dosage for at least 10 days to prevent rheumatic fever or glomerulonephritis. In staphylococcal infections, perform surgery as indicated.

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P A P E R

THE PHYSICIAN'S RESPONSIBILITIES IN THE CASE OF EXPERIMENTAL DRUGS AND PROCEDURES

Neil T. Greenidge
New York Medical College
Prize Winning Essay
Norman A. Welch, M.D.
Medical Ethics Essay Contest
1966

It is one of the characteristics of the medical profession that its rules and principles are not static. It is a dynamic field of endeavor where new information is being daily accumulated, where unsolved problems are being constantly tackled and solved, and where as a result of all this industry and research, the mystery of yesterday becomes the commonplace of today and today's therapy becomes tomorrow's museum oddity.

To keep medicine up-to-date, to continue the advances in the field, to achieve improvements in diagnosis and treatment, a spirit of dissatisfaction with the present degree of knowledge and a determination for further experimentation are indispensable. But this practice of research raises many ethical problems, for although research and experiments can be performed on animals, the results of animal experimentation cannot always be extrapolated to human beings, and the time inevitably arrives when the human patient must be subjected to experimental drugs and procedures. What then should be the guiding lines, and what are the physician's responsibilities in such cases?

The first prerequisite lies in the character and personality of the researcher himself. He must not be a callous and inhuman person, however

brilliant, whose sole consideration is the acquisition of knowledge. He must be a person of high moral integrity, filled with love and compassion and guided more by a tender regard for the safety of his subjects than by a desire for personal fame and glory.

The physician's first responsibility is to his patient. But he also has a responsibility to his society. When these two obligations coincide, there is no problem. But it is often the case that research and experimentation may increase knowledge and help mankind without being of any benefit to the particular patient. Herein lies the dilemma, for then the doctor is caught between the Scylla and Charybdis of his responsibility to his patient and his obligation to society.

In this respect, it would appear that the best guidelines would be the general principle that the patient should not be harmed by the experiment. The welfare of this present patient, not of theoretical future ones, should be the main concern. In the light of this principle, experimental procedures would be considered ethical, even if they did not help the patient, provided they did not harm him either. This may be extended, however. In the case of the patient who cannot be aided by present knowledge and measures, experimentation would be

in order provided the potential harm from the experiment does not exceed the damage that would naturally be expected to result from the untreated disease.

This principle is not only in consonance with the assumption that health is to be preferred to illness; it also ensures that mass experimental atrocities as have been witnessed in the not so distant past, shall not again take place.

A second principle by which the experimenter should be guided is that of full explanation to the patient of the real or potential dangers involved in the drug or procedure to which he will be subjected. This rule, however, presents difficulties in certain cases. It may very well be that the subject's knowledge that he is part of an experiment may color the results with subjective influences. The double-blind study would prohibit this stipulation, and there is no doubt that results would be more accurate if the patient were unaware of his participation in a study. The answer to this problem lies in part in the inclusion of placebo and control groups by which subjective influences can be ascertained and properly evaluated.

Another obvious principle is that the physician should first obtain the permission of the patient before any experiment is carried out. This is of both moral and legal importance. It is the experimenter's duty to ensure that the subject is mentally aware of the implications of his authorization. The mentally unbalanced person with his suicidal desires may readily submit to a procedure, actually hopeful of the dangers involved. The physician ought to be sure that he is not an unwitting accomplice to such masochistic tendencies. Both religion and law recognize that there is a limit to man's authority over himself. The unsuccessful suicide, for example, is subject to the full rigors of the law. In short, the point made here is that one should not experiment on another on the sole basis that he has agreed to be experimented upon.

So far the main discussion has centered around the experimental subject. But there are practical instances in which someone other than

the subject is involved. The field of organ transplantation is filled with such examples. So far there has not been lasting success with organ transplants. The body's immunologic system offers the chief deterrent and suppression of this system often leads to fatal infection. A question of ethics is raised by the removal of, for example, a kidney from a healthy relative to give to a dying patient. Is the surgeon justified in not only subjecting a person, even with his permission, to the dangers of an operation which is unnecessary to his health, but more importantly, in depriving him of a spare part, a kidney which may be required in the future — and all this for a purpose which is, at present, almost doomed to failure? These experimental transplantations are justified and offer hope to both the present patient and future society but should not such procedures be confined, at least until their success has been established, to organs derived from cadavers? There are practical and moral arguments on both sides, and it is not easy to arrive at any definite ethical conclusion. Much thought is required on the part of the Law, the Church, and Medicine in solving such dilemmas.

Problems such as these underscore the fact that the field of experimental drugs and procedures represents one of the many areas in the medical profession where important questions of ethics and morality are involved. In his activity in this field, the physician should be guided by the principles of the welfare first and foremost of his patient, and the avoidance of harm, the disclosure to the subject of all the dangers involved, and the consent of the patient. The welfare of an involved second person, as in the case of organ donors mentioned above, must also be a consideration. None of these guidelines alone will be enough, but if these principles taken as a whole are observed by a researcher and experimenter imbued with a scrupulous and compassionate regard for human safety and comfort, it is felt that safeguards against inhuman conduct will have been preserved, without the price of inflicting undue obstacles to the wholesome pursuit of knowledge and information.

"A New Look at the Self-Employed Retirement Act"

In 1962 Congress enacted the Self-Employed Retirement Act also referred to as H.R. 10 or the Keough Bill which was intended to offer self-employed persons similar retirement benefits available to individuals working for corporations under profit sharing trusts. The act as finally adopted had many serious defects, the foremost of which related to deductibility of contributions. As a result, the benefits available under this act were so far from those offered under the corporate law that few self-employed individuals took advantage of its provisions. Since that time the laws and regulations controlling profit sharing plans have tightened up considerably and in 1967 Congress amended the Self-Employed Retirement Act making its use much more attractive to self-employed persons and more in line with corporate retirement plan laws.

BENEFITS UNDER PRESENT ACT

There are three basic benefits provided under the Self-Employed Retirement Act which makes it attractive:

1) An income tax deduction is allowed each year after January 1, 1968 for the **full** amount contributed to the plan. A self-employed person can contribute up to 10% of his "earned

income" or \$2,500.00, whichever is less, annually. He must, however, contribute the same percentage of the salaries of each full time employee with three or more years of continuous service.

2) All capital gains and income realized on the amounts contributed and reinvested each year **accumulate tax free** prior to distribution.

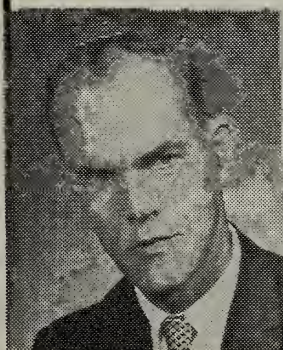
3) Tax breaks are provided when the fund is distributed at retirement or death.

MASTER PLAN APPROACH

In order to take advantage of the Act, it is necessary to have an agreement prepared by an attorney and approved by the Internal Revenue Service in order to gain tax exempt status. Many plans failed to materialize because of the cost and difficulty of setting up and getting a plan approved. In light of this the Internal Revenue Service has sanctioned the creation of "Master Plans" by banks in order to simplify this first step. Those banks that have established approved "Master Plans" can offer them to a professional person by his signing of an "Adoption Agreement" thus eliminating the initial cost and delay. These plans are, of course, available for scrutiny by a person's attorney before signing.

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INVESTMENT OF THE FUNDS

The law provides basically for four types of investment media: 1) Trust type which allows broad investment diversification; 2) Insurance or annuity contracts; 3) Mutual Funds and 4) Special U. S. Government Bonds. The bank plan, of course, is the trust type and most banks with established Master Plans are creating two separate collective investment funds to handle the contributions to these plans exclusively. One fund is generally a "Fixed Income" type fund which will be invested primarily in Corporate and Government Bonds and mortgages. This fund naturally will be of a conservative nature and will be intended primarily to produce income and protect principal. The second fund is usually an "Equity Fund" to be invested almost exclusively in common stocks. This fund, of course, is intended to provide growth rather than income.

By using two commingled funds as explained, banks can cut investment costs, provide diversification and meet nearly any desired investment objective.

HOW THE PLAN WORKS

Shortly after the end of each taxable year the self-employed person or persons will forward a check for his contribution based on his earned income and the salaries of his eligible employees for the year just ended. The trustee will invest the funds in the Collective Investment Funds as directed in the "Adoption Agreement." At the end of each year the trustee will forward a report showing the total value of each participants account along with a complete statement as to the condition and activity of the Collective Funds in which they participate.

TAX ADVANTAGES

The following example shows how taxes can be saved under a Self-Employed Retirement Act Plan:

Dr. A has net earnings of \$28,000.00 per year from his medical practice. He is 40 years old, married with two children and has no full time employees. He files a joint return with his wife, taking itemized deductions of \$2,800.00 in addition to his \$2,400.00 personal exemptions.

Dr. A wants to set aside \$1,700.00 each year for his future retirement. If he makes a maximum contribution of \$2,500.00 to a qualified retirement plan his tax will be \$800.00 less than before. In computing his tax he deducts one half his contribution in 1967 or \$1,250.00 and in 1968 and later years he will be able to deduct the full \$2,500.00 contribution. Since Dr. A is in the 32% tax bracket, this means a tax savings

of \$400.00 in 1967 (32% of \$1,250.00) and \$800.00 in 1968 (32% of \$2,500.00).

With the money saved in taxes Dr. A can contribute \$2,500.00 to a retirement plan as opposed to \$1,700.00 per year without the retirement plan.

Comparing an annual purchase of securities totaling \$1,700.00 without a tax shelter to an annual purchase of securities totaling \$2,500.00 under a qualified retirement plan produces startling results. Assuming an annual return of 7% and keeping in mind that the 7% annual yield in the unsheltered fund is before taxes, Dr. A realizes approximately a 5.75% yield after taxes since he is in the 32% tax bracket. In the sheltered fund the 7% yield is net since it is exempt.

YEARS OF ACCUMU- LATION	UNSHELTERED FUND	SHELTERED FUND
5	\$ 9,940.00	\$ 15,380.00
10	22,770.00	36,960.00
15	39,350.00	67,220.00
20	60,780.00	109,660.00
25	88,470.00	169,190.00

The amount held in the unsheltered fund represents after tax dollars and is thus not taxable when it is used at retirement, however, the dollars in the sheltered fund are subject to tax at distribution.

Dr. A can take the \$169,290.00 in a lump sum at retirement and apply the special tax rules and end up with \$118,135.00 net after taxes of \$51,055.00 — \$29,665.00 more than in the unsheltered fund. Dr. A can also take the proceeds over a period of years in the form of an annuity in which case the taxes (making certain assumptions too lengthy to discuss here) would be approximately \$31,467.00 or \$19,588.00 less than they would be by taking a lump sum benefit.

ADDITIONAL BENEFITS

In addition to the tax advantages explained a plan of this nature allows a self-employed person to retire at a reasonable age with the security of assets that have kept pace with the economy. Furthermore, the employer has the satisfaction of having helped to prepare for the retirement of his long time employees.

One of the most difficult and expensive problems facing any employer is the hiring and maintenance of capable personnel. Self-employed persons will find that offering retire-

ment benefits is often the difference in gaining and maintaining highly qualified and loyal help.

In light of the changes in the law and the advantages of the master plan approach every self-employed person should carefully examine the applicability of the Self-Employed Retirement Act to his situation before shrugging it off as impractical.

Courtesy of

A. R. Olson, Jr., Trust Officer
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Precaution: same as 16 mg. of phenobarbital



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Indications: Osteoarthritis, rheumatoid arthritis, rheumatoid spondylitis, psoriatic arthritis, acute gout, painful shoulder (peritendinitis, capsulitis, bursitis and acute arthritis of that joint), acute superficial thrombophlebitis.

Contraindications: Edema; danger of cardiac decompensation; history or symptoms of peptic ulcer; renal, hepatic or cardiac damage; history of drug allergy; history of blood dyscrasia. The drug should not be given when the patient is senile or when other potent drugs are given concurrently. Large doses of Butazolidin alka are contraindicated in glaucoma.

Warning: If coumarin-type anticoagulants are given simultaneously, watch for excessive increase in prothrombin time. Instances of severe bleeding have occurred. Pyrazole compounds may potentiate the pharmacologic action of sulfonamide-type agents and insulin. Carefully observe patients receiving such therapy. Use with great caution in the first trimester of pregnancy.

Precautions: Before prescribing, carefully select patients, avoiding those responsive to routine measures as well as contraindicated patients. Obtain a detailed history and a complete physical and laboratory examination, including a blood count. The patient should not exceed recommended dosage, should be closely supervised and should be warned to discontinue the drug and report immediately if fever, sore throat, or mouth lesions (symptoms of blood dyscrasia); sudden weight gain (water retention); skin reactions; black or tarry stools or other evidence of intestinal hemorrhage occur. Make regular blood counts. Discontinue the drug immediately and institute countermeasures if the white count changes significantly, granulocytes decrease, or immature forms appear. Use greater care in the elderly and in hypertensive

Adverse Reactions: The most common are nausea, edema and drug rash. Swelling of the ankles or face may be minimized by withholding dietary salt, reduction in dosage or use of diuretics. In elderly patients and in those with hypertension the drug should be discontinued with the appearance of edema. The drug has been associated with peptic ul-

Path C A P s u l e

Submitted by the College of American Pathology in connection with the South Dakota Society of Pathologists.

INDICATIONS FOR BLOOD TRANSFUSION

The indications for blood transfusions have undergone many changes through the years. At first, blood transfusion was a formidable procedure and was used only when life hung in the balance. Later, during the post World War II period, the indications for blood transfusion were expanded to include a wide range of disorders, and frequently blood was even given as a "tonic." However, as knowledge of the various blood group factors increased and the real risks associated with blood transfusion were recognized, the pendulum swung in the opposite direction. Today, blood is being given only for very specific reasons.

The replacement of a sudden loss of blood is the most obvious indication for a blood transfusion, and the extent of blood loss will determine the management of such cases. Transfusions of whole blood, plasma, dextran or other volume expanders are often necessary to treat or prevent shock. In a life or death situation it may be necessary to administer low titer group O Rh negative blood without prior crossmatching. In most cases, however, the laboratory can provide properly cross-matched blood in a relatively short time. When the physician is faced with the necessity of using inadequately cross-matched blood in extreme emergencies, he must carefully weigh the inherent risks against the possible benefits. An estimate of the blood loss can be used as a guide for replacement but it should be understood that it is not necessary to replace every drop of lost blood. Furthermore, the physician must always be alert to the danger of pulmonary edema and circulatory overload caused when too much blood is administered too quickly. However, if shock persists it may be necessary to risk pulmonary edema in order to treat the circulatory collapse.

One of the most difficult decisions which the physician faces involves the treatment of chronic anemia. The temptation to administer blood to these patients as the primary method of therapy is great, particularly when hemoglobin levels of 4 or 5 grams per 100 ml. are observed. It is important to remember that these patients have usually had an opportunity to adjust to their chronic anemia, and frequently they are in no distress. The first thing the physician should do is to initiate a diagnostic program designed to determine the etiology of the anemia. If the anemia is found to be related to a deficiency of iron, folic acid or Vitamin B₁₂ the anemia will usually respond to supplementation of the deficient factor, and the patient may replenish his hemoglobin without the necessity of blood transfusion. However, if these patients show signs of cardiac failure or air hunger it may become necessary to resort to transfusion. In such cases it is wise to use packed red cells in order to avoid cardiac overload, and the blood should be administered slowly taking three to four hours to administer one unit of blood. While the patient with uncomplicated chronic anemia usually does not require transfusion when the hemoglobin is in the range of 8 grams per 100 ml., the occurrence of a complicating illness or sudden drop in hemoglobin due to bleeding or intravascular hemolysis or sudden bone marrow depression may require the administration of blood. On the other hand the cardiac or pre-surgical patient may require transfusion if the hemoglobin level is under 10 grams per 100 ml.

The use of transfusion in hemolytic anemia requires careful consideration of the clinical status of the patient. The physician should never expect to maintain a normal hemoglobin level in patients with sickle cell disease, Mediterranean anemia and the anemias related to other hemoglobinopathies. Here, it is best to withhold transfusions until a hemolytic crisis occurs. The over-zealous use of blood can only hasten the day when the patient has been sensitized to so many blood group factors that it becomes almost an impossibility to find a compatible blood for transfusion. Patients who have an acquired type of hemolytic anemia are often difficult to crossmatch from the very beginning because of the underlying immunological disorder that is present. In these cases, the danger of a hemolytic reaction is increased if the patient is transfused.

The hemolytic anemia of **erythroblastosis fetalis** is a specialized problem and the phys-

PROFESSIONAL COURTESY

Adopted by Judicial Council

June 17, 1967

ician must be prepared to perform an exchange transfusion whenever certain danger signals appear. The major indications for exchange transfusion in infants with erythroblastosis include:

- (1) **a cord bilirubin level of 4 mg per 100ml or higher;**
- (2) **a rising serum bilirubin which can be expected to exceed the level of 20 mg per 100 ml;**
- (3) **severe anemia with marked reticulocytosis and impending cardiac failure.**

The last group of patients for consideration are those who are bleeding because of a deficiency of a factor required for blood coagulation. Patients with bleeding disorders should have a complete coagulation study to determine which blood factor is missing. If the deficiency is pinpointed, in many instances the physician can prescribe the proper replacement therapy for the correction of the hemorrhagic tendency. Coagulation factors V and VIII and blood platelets are very unstable in stored blood. Treatment of these deficiencies requires special care in drawing the blood for transfusion. The blood should be administered as soon as possible after being drawn and always within a period of 24 hours. Fresh frozen plasma is the ideal agent for use in hemophilia (factor VIII deficiency). Patients with either platelet deficiency or fibrinogen deficiency usually require more of the deficient coagulation factor than can be given by ordinary whole blood transfusion because of the low concentration of these factors in the blood. It is often necessary to administer platelet concentrates for thrombocytopenia. Afibrinogenemia or hypofibrinogenemia are best managed by administering concentrated fibrinogen.

The patients who bleed after a massive hemorrhage and/or multiple transfusions may require fresh whole blood, as may the patient bleeding from severe hepatic disease. Transfusion of fresh blood in such situations can be life saving.

REFERENCE

1. Strumia, Max, **General Principles of Blood Transfusion**, J. B. Lippincott, 1963, p. 19-20.

The custom of professional courtesy embodies the ancient tradition of fraternalism among physicians in the art which they share, and their mutual concern to apply their learning for the benefit of one another as well as their patients. The Judicial Council reaffirms and endorses the principle of professional courtesy as a noble tradition that is adaptable to the changing scene of medical practice.

Professional courtesy is not a rule of conduct that is to be enforced under threat of penalty of any kind. It is the individual responsibility of the physician to determine for himself and within his own conscience to whom and the extent to which he shall allow a discount from his usual and customary fees for the professional services he renders, and to whom he shall render such services without charge as professional courtesy.

The following guidelines are offered as suggestions to aid physicians in resolving questions related to professional courtesy.

1. Where professional courtesy is offered by a physician but the recipient of services insists upon payment, the physician need not be embarrassed to accept a fee for his services.
2. Professional courtesy is a tradition that applies solely to the relationship that exists among physicians. If a physician or his dependents have insurance providing benefits for medical or surgical care, a physician who renders such service may accept the insurance benefits without violating the traditional ethical practice of physicians caring for the medical needs of colleagues and their dependents without charge.
3. In the situation where a physician is called upon to render services to other physicians or their immediate families with such frequency as to involve a significant proportion of his professional time, or in cases of long-term extended treatment, fees may be charged on an adjusted basis so as not to impose an unreasonable burden upon the physician rendering services.
4. Professional courtesy should always be extended without qualification to the physician in financial hardship, and members of his immediate family who are dependent upon him.

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A program of lectures and discussions on problems of general interest in medicine and surgery

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1967

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This program is acceptable for credit by the American Academy of General Practice and the College of General Practice of Canada.

The registration fee for this program is \$10.

The number of physicians who can be accommodated is necessarily limited. For this reason identical programs will be offered two successive weeks. The program will be presented first on November 6, 7 and 8 and repeated on November 13, 14, and 15. Those wishing to attend should communicate with Mr. M. G. Brataas, Mayo Clinic, Rochester, Minnesota, indicating which session they would prefer to attend.

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The American Cancer Society has launched a new series of films, as part of its expanding program of professional education. Oral cancer, nursing cancer patients, diagnosing and managing colon-rectum cancer, are a few of the subjects presented in these new color films. For more information and arrangements for showings, call your local ACS office.

THE DIAGNOSIS AND MANAGEMENT OF CANCER OF THE COLON-RECTUM

A new 17 minute film for physicians and medical students released by the American Cancer Society, stresses the importance of routine procto exams and demonstrates detection and treatment of both symptomatic and asymptomatic cancer of the colon and rectum. Showings may be arranged through your local ACS.

**AMERICAN COLLEGE OF CHEST
PHYSICIANS ANNOUNCES
1967-68 POSTGRADUATE PROGRAM**

- #1 CARDIOPULMONARY PROBLEMS IN CHILDREN
Holiday Inn Chicago, Ill. Sept. 21-23, 1967
- #2 CLINICAL CARDIOPULMONARY PHYSIOLOGY
Knickerbocker Hotel Chicago, Ill. Nov. 6-10, 1967
- #3 DIAGNOSIS AND TREATMENT OF DISEASES OF THE HEART AND LUNGS
Barbizon-Plaza New York City Nov. 13-17, 1967
- #4 CLINICAL APPLICATION OF CARDIOPULMONARY PHYSIOLOGY
Ambassador Hotel Los Angeles, Calif. Feb. 12-16, 1968
- #5 DIAGNOSIS AND TREATMENT OF CARDIOVASCULAR AND PULMONARY DISEASES
Hotel Fontainebleau Miami Beach, Florida March 4-8, 1968
- #6 CINE ANGIOGRAPHIC TECHNIQUES IN CARDIOVASCULAR DISEASE
Cleveland Clinic Cleveland, Ohio April 29, 30, May 1, 1968

For further information regarding the above Courses please contact the American College of Chest Physicians, 112 East Chestnut Street, Chicago, Illinois 60611.

**POSTGRADUATE COURSE IN
LARYNGOLOGY AND
BRONCHOSOPHAGOLOGY
November 6 to 17, 1967**

The Department of Otolaryngology of the Illinois Eye and Ear Infirmary and the College of Medicine of the University of Illinois at the Medical Center, Chicago, will conduct a postgraduate course in Laryngology and Bronchosophagology from November 6 through 17, 1967. This course is limited to fifteen physicians and will be under the direction of Paul H. Holinger, M.D. It will be held largely at the new Illinois Eye and Ear Infirmary, 1855 West Taylor Street, Chicago, and will include visits to a number of Chicago hospitals. Instruction will be provided by means of animal demonstrations and practice in bronchoscopy and esophagoscopy, diagnostic and surgical clinics, as well as didactic lectures.

Interested registrants will please write directly to the Department of Otolaryngology, Col-

lege of Medicine of the University of Illinois at the Medical Center, Postoffice Box 6998, Chicago, Illinois 60680.

Letter to the Editor—

Watertown, S. Dak.
June 14, 1967

South Dakota State Medical Association
Dr. John Stransky, President
Brown Clinic, Watertown, S. Dak.
Gentlemen:

I want to express my appreciation and to thank you most deeply for the honor awarded me at your State Meeting. I am ill at ease when I am in the public eye but all of us do like to be recognized and to be appreciated. What I have done has been out of love for the children but it gave me a real lift to be commended by a group whose standards of care for children are so high and it made me feel that I had done a good job.

Thank you again for this very great honor.

Most Sincerely,
Mrs. Wm. Fish

Quain and Ramstad Clinic offers excellent opportunities for: Orthopedic Surgeon, Internists, Otolaryngologist, Dermatologist, Family Practice Physicians, Neurologist. Located in clean, family-centered community, with easy access to metropolitan shopping and cultural center, excellent sports area (fishing, hunting, skiing, boating, golfing). Two hospitals located within 3 blocks of clinic. Benefits include hospitalization, life and disability insurance, pension plan, death benefits, liberal vacation and study time. Initial guaranteed income with assured pay increases and senior staff participation after 3 years of service. Opportunity unequalled for those interested in advancement by productive effort. Selected candidates will be interviewed at the clinic's expense. Write Business Manager, Box 1818, Bismarck, North Dakota 58501.

COMMENTARY

From



THE UNIVERSITY OF SOUTH DAKOTA SCHOOL OF MEDICINE

Edited by: Dr. Charles R. Gaush, Publications Committee

SKF FELLOWSHIP

The School of Medicine has received a report on a Smith, Kline & French Foreign Fellowship recently completed by Fred Stahmann, a member of the USD School of Medicine Class of 1965. The three month fellowship was served at the Lutheran Hospital in Manambaro, Madagascar during which time Dr. Stahmann became involved in the health care problems of the former French colony. Dr. Stahmann's two supervisors, Dr. Leonard Akland and Dr. R. A. Bolstead, made up the entire professional staff of the 50-bed general hospital. The Lutheran Mission has another hospital some 200 miles from Manambaro where Dr. Stahmann spent two weeks of his fellowship. The principal health problems encountered in southern Madagascar were parasitic infections, leprosy, tetanus, typhoid, circumcisions and compounded dental problems. According to Dr. Stahmann, appendicitis, cholecystitis and coronary heart disease were virtually non-existent. In addition to receiving extensive exposure to the practice of medicine in an underdeveloped country, Dr. Stahmann learned sufficient Malagasy to be able to take case histories and carry on simple conversation. Before leaving his assignment, he prepared an English-Malagasy translation booklet which, according to his sponsors and officials at SKF, will be very useful to others in the future. After returning to the United States in December, 1966, Dr. Stahmann, whose home is in Sioux Falls, continued with his senior year of medical education at Northwestern University and graduated in June, 1967.

PSYCHIATRY TRAINING GRANT AWARDED

Dr. Philip F. Pugh has been informed that his undergraduate training grant in psychiatry has been renewed. The amount awarded for this academic year from the National Institute of Mental Health was \$10,130 and the program has been approved for an additional 5 years making the total award \$60,780. Dr. Pugh and his associates have had the training grant for 11 years to instruct undergraduate medical students in child growth and development, genetics as related to neurology and psychiatry, psychological methods and the classification of various personality disorders, psychoneurotic reactions, psychophysiological reactions and psychotic disorders. Assisting Dr. Pugh in this training program are Dr. Stark and Mr. Kandik in Sioux City. Drs. Smith and Church, of Sioux Falls, present physical diagnostic procedures with regard to neurological problems.

DR. GREGG GOES TO WASHINGTON

Dr. John B. Gregg, Professor of Otolaryngology, has been awarded a traineeship in Otolaryngic Pathology by the American Academy of Ophthalmology and Otolaryngology. The period of study is from October 1 to December 31, 1967 at the Armed Forces Institute of Pathology in Washington, D. C. The awards are granted on a national competitive basis and were announced by Dr. B. H. Senturia, Chairman of the Committee on Otolaryngic Pathology. Dr. Gregg will leave for Washington at the end of September and return in January.

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Contraindications: Infants, patients with history of convulsive disorders, glaucoma or known hypersensitivity to drug.

Warning: Not of value in the treatment of psychotic patients, and should not be employed in lieu of appropriate treatment.

Precautions: Limit dosage to smallest effective amount in elderly or debilitated patients (not more than 1 mg, one or two times daily initially) to preclude ataxia or oversedation, increasing gradually as needed or tolerated. As is true of all CNS-acting drugs, until correct maintenance dosage is established, advise patients against possibly hazardous procedures requiring complete mental alertness or physical coordination. Driving during therapy not recommended. In general, concurrent use with other psychotropic agents is not recommended. If such combination therapy is used, carefully consider individual pharmacologic effects—particularly with known compounds which may potentiate action of Valium (diazepam), such as phenothiazines, barbiturates, MAO inhibitors and other antidepressants. Advise patients against simultaneous ingestion of alcohol or other CNS depressants. Safe use in pregnancy not established. Employ usual precautions in treatment of anxiety states with evidence of impending depression; suicidal tendencies may be present and protective measures necessary. Observe usual precautions in impaired renal or hepatic function. Periodic blood counts and liver function tests advisable in long-term use. Cease therapy gradually.

Side Effects: Side effects (usually dose-related) are fatigue, drowsiness and ataxia. Also reported: mild nausea, dizziness, blurred vision, diplopia, headache, incontinence, slurred speech, tremor and skin rash; paradoxical reactions (excitement, depression, stimulation, sleep disturbances, acute hyperexcited states, hallucinations); changes in EEG patterns during and after drug treatment. Abrupt cessation after prolonged overdosage may produce withdrawal symptoms (convulsions, tremor, abdominal and muscle cramps, vomiting, sweating) similar to those seen with barbiturates, meprobamate and chlordiazepoxide HCl.

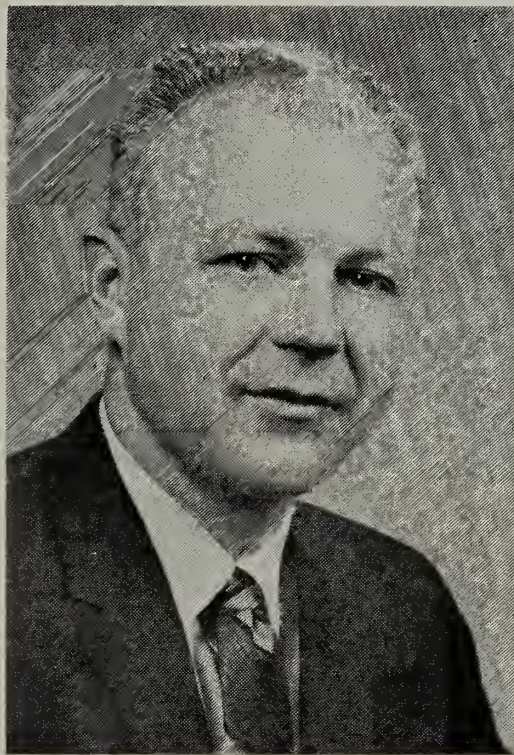
Dosage—Adults: Mild to moderate psychoneurotic reactions, 2 to 5 mg b.i.d. or t.i.d.; severe psychoneurotic reactions, 5 to 10 mg t.i.d. or q.i.d.; alcoholism, 10 mg t.i.d. or q.i.d. in first 24 hours, then 5 mg t.i.d. or q.i.d. as needed; muscle spasm with cerebral palsy or athetosis, 2 to 10 mg t.i.d. or q.i.d. *Geriatric patients:* 1 or 2 mg/day initially, increase gradually as needed and tolerated. (See Precautions)

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P R E S I D E N T ' S P A G E



Greetings:

The work of our Commissions and Committees is central to the success of our State Association. We rely most heavily on the various Commissions for direction in formulating Association policy.

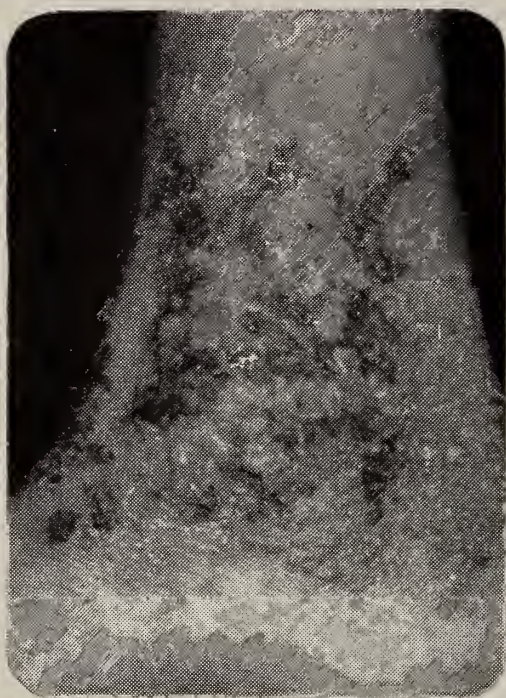
Our Commissions are tossed problems and asked to come up with the answers. They have both the opportunity and responsibility to seek out the information they need, separate fact from fiction and carefully weigh alternate solutions. Having done this, they are able to recommend appropriate courses of action.

The Chairmen and members of the Commissions and Committees of the State Association are listed on page 69. To function most effectively for you, the Commission members need your thoughts and ideas. **Look over the list.** Seek out Commission members from your area and give them the benefit of your thinking on the problems we're facing. Do it before the first Commission meetings on September 30th, and do it repeatedly during the coming months.

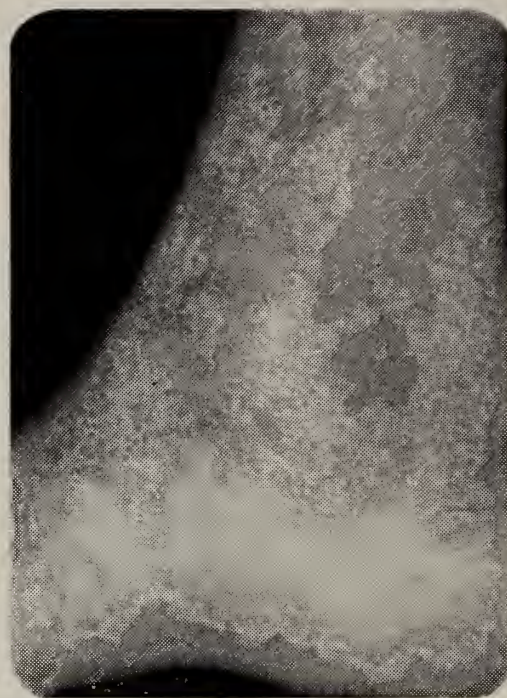
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Precautions and Side Effects: Do not use in the eyes or in the ear (if drum is perforated). A few individuals react unfavorably under certain conditions. If side

effects are encountered, the drug should be discontinued and appropriate measures taken. Use on infected areas should be attended with caution and observation, bearing in mind the potential spreading of infection and the advisability of discontinuing therapy and/or initiating antibacterial measures. Generalized dermatological conditions may require systemic corticosteroid therapy. Steroid therapy, although responsible for remissions of dermatoses, especially of allergic origin cannot be expected to prevent recurrence. The use over extensive body areas, with or without occlusive non-permeable dressings, may result in systemic absorption. Appropriate precautions should be taken. When occlusive nonpermeable dressings are used, miliaria, folliculitis and pyoderma will sometimes develop. Localized atrophy and striae have been reported with the use of steroids by the occlusive technique. When occlusive nonpermeable dressings are used, the physician should be aware of the hazards of suffocation and flammability. The safety of use on pregnant patients has not been firmly established. Thus, do not use in large amounts or for long periods of time on pregnant patients.

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News Notes • Changes • Births • News

Pop's Proverb

Going along with public opinion may be expedient, but is it always honest?

NEW CLINIC IN WINNER

The newest addition to Winner's medical facilities is the Medical Arts Building, owned in partnership by **Doctors M. R. Cosand, and R. L. Stiehl.**

* * *

Dr. Raynold R. Maixner is now associated with **Dr. T. H. Willcockson** in the practice of ophthalmology at 415 West Third Street, Yankton, South Dakota.

* * *

The Second International Congress of Lymphology will be held March 15-20, 1968 at the Fontainebleau Hotel in Miami Beach, Florida. The basic themes of the congress are: 1.) Basic lymphology, 2.) Lymphatic system in cancer, and 3.) Experimental lymphology. Latest advances in various aspects of the Lymphatic system will be presented by an international faculty which will include 40 guest speakers from abroad. A total of 45 hours of conference time, over 100 papers, 16 general discussions and 16 symposia will be presented. For additional information write Manuel Viamonte, Jr., M.D., Professor of Radiology and Coordinator of Postgraduate Medical Education, University of Miami School of Medicine, 1450 N.W. 11th Avenue, Miami, Florida.

Dr. Walter Miller, Aberdeen, was recently certified by the specialty board of the American Board of Pediatrics, and **Dr. Jerome Pucelik,** Aberdeen, by the specialty board of the American Board of Surgery.

* * *

Mrs. Judee Schlosser, Assistant Editor of the Medical Journal for the past six years, has terminated her employment due to her husband's being transferred to Denver, Colorado.

* * *

Two former governors of American Legion Boys State in South Dakota attended the 25th anniversary program this year. They were **James Kineen,** now of Omaha, governor in 1954; and **Karl Wegner, M.D.,** Sioux Falls, governor in 1947.

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NEW PHS PERSONNEL

Three new doctors have arrived to assume their duties at the Eagle Butte Public Health Hospital. They are **Doctor Alan Crosby,** the new Service Unit Director; **Doctor Tom Billings,** and **Doctor Larry McEvoy.**

* * *

Dr. John A. Ochsner has recently joined **Dr. John H. Hoskins** and **Dr. James H. Hoskins** in the practice of urology at 1200 South Euclid Ave., Sioux Falls, South Dakota.

* * *

Dr. C. A. Stern has discontinued his practice in Sioux Falls, to accept a fellowship training grant. He will spend one year at the University of California, Berkeley.

* * *

Dr. G. F. Wood, Rapid City, has been reappointed to the State Medical Panel, by Gov. Boe.

* * *

Dr. and Mrs. Bernard Herzog of Pensacola, Florida, will make their home in Milbank where Dr. Herzog will be associated with the Milbank Clinic.

* * *

Dr. J. D. Collins and his family have taken up residence in Hoven as of June 23. Dr. Collins is practicing at Holy Infant Hospital starting July 6. We wish to extend a hearty welcome to Dr. Collins, his lovely wife, Pat, and his charming daughter, Coleen.

Dr. Arthur Semones, Lead has been appointed to serve as a member of the newly created State Commission on the Prevention of Alcoholism.

* * *

John Freeman, M.D., has announced plans to join the Hand County Clinic in Miller, South Dakota, about the middle of September.

* * *

President Moulton has acknowledged acceptance of a grant in the amount of \$17,140 from the Department of Health, Education and Welfare for the Health Professions Scholarship Program for the period of July 1, 1967 through June 30, 1968.

* * *

Dr. G. Robert Bartron, state senator from Codington County, has been selected to appear in the 1967-68 edition of Outstanding Personalities of the West and Midwest.

Dr. John Stewart, Lead was commissioned July 6, in Minneapolis as a lieutenant in the Navy. Dr. Stewart will be stationed in California.

* * *

Basic Techniques in Urinalysis will be presented August 25th by the Department of Pathology in co-sponsorship with the South Dakota State Medical Association. This is a workshop designed for the laboratory technician in the doctor's office or small hospital laboratory.

* * *

Dr. Charles Roberts, Jr. is the new president of the Brookings school board.

* * *

Dr. Francis X. McCabe of Sioux Falls is joining the staff of the Brookings Clinic August 1, in the specialty of general surgery.

Dr. Roy Knowles has been named chairman of the finance committee of the Sioux Falls School Board. Dr. Paul Reagan was named chairman of the salary committee.

* * *

Dr. Philip F. Pugh has been notified of an undergraduate psychiatry award in the amount of \$10,130.00 as a training grant from the National Institute of Mental Health.

* * *

Mr. Gene Brantner, Executive Director of the South Dakota Heart Association, resigned August 1, 1967 to become Executive Director of the Arizona Heart Association in Phoenix.

* * *

Dr. Edward C. Hanisch, Jr. of the Huron Clinic will join the Staff of the University of Kansas Medical Center, Kansas City, September 1st.

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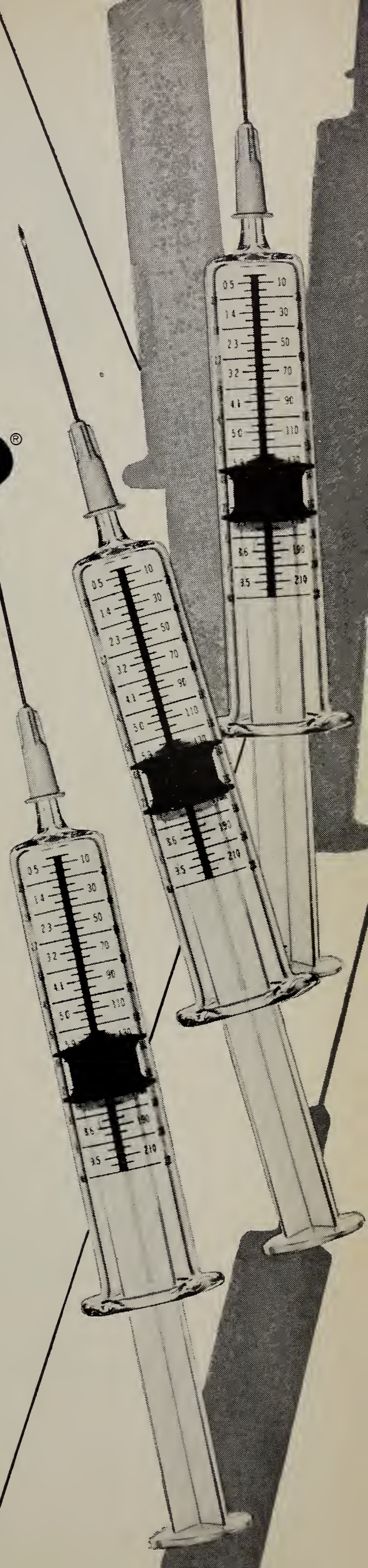
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JOURNAL OF MEDICINE

JOURNAL OF THE SOUTH DAKOTA STATE MEDICAL ASSOCIATION
AND THE SIOUX VALLEY MEDICAL ASSOCIATION

Volume XX

October, 1967

Number 10

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MARITAL DISCORD CORRELATED WITH SEX-ROLE IDENTIFICATION

Philip F. H. Pugh, M.D.,* and
Barbara Schulte,¹ B.S.**

This study² involves interviews with fifteen couples experiencing marital difficulty. They constitute all the new problems of marital discord who presented themselves to a single psychiatric practitioner during a month of clinical work. Most of the couples sought psychiatric help with problems directly related to their marriage.

The interviews of these unselected cases were conducted to learn the psychodynamic processes which were operating, causing their respective difficulties, and to attempt to understand patterns in their behavior. This paper does not involve therapy.

In the year, 1965, January through December, there was one divorce in approximately four marriages on a nationwide basis.³ The yearly averages for the northcentral states of Iowa, Minnesota, Nebraska, and South Dakota are similar to this national average:

Iowa	1 divorce; 5 marriages
Minnesota	1 divorce; 6 marriages
Nebraska	1 divorce; 6 marriages
South Dakota	1 divorce; 8 marriages

*Professor of Psychiatry & Neurology & Department Chairman, University of South Dakota School of Medicine, Vermillion, South Dakota.

**Senior, University of Washington.

¹NIMH Study Grant.

²Clinical work at St. Luke's Hospital, Sioux City, Iowa, June and July, 1965. Interview time with each spouse ranges from 2 hours to 20 plus hours, with a median of 6-8 hours for analysis of problems.

³Approximated from "Marriage and Divorce by States," *World Almanac*, 1966, Page 336.

Explanation: This statistic sounds worse than the actual situation for it doesn't mean there is one divorce in four, six, or eight marriages per year. The divorce rate per year is based on all marriages performed in previous years; couples are living who may have been married, ten, twenty, thirty or even forty plus years. The actual rate is, therefore, predicated on the state of South Dakota duration of marriages of 12+ years; thus South Dakota with one divorce and 8 marriages per year times the 12 year average duration equals 96 marriages and out of this group there is one divorce, or expressed in percent $(1/96) (100) = 1.04\%$ or approximately 1% of marriages terminate in divorce, yearly.

The general practitioner is confronted daily, however, by patients whose complaints are directly or indirectly related to their marriage. For this reason, he must be interested in the dynamic processes involved.

Marriage is a contract between a man and a woman who have developed and matured physically, mentally, and psychologically independently from each other, and who agree to unite in an intimate association. Both partners bring to their marriage the sum of their genetic inheritance and learned patterns of behavior. It is still impossible to say which is most important, chromosomal contribution or the learning process, in the assumption of the correct sexual role in marriage, but it is probably fifty-fifty.

The assumption of the proper sex role (male or female charactering) is made easier by a bio-

logical contribution which gives the young lady a petite, shapely figure with a pretty face and gives the young man a tall broad-shouldered physique with a strong jaw line. "Womanliness" is attributed to this young lady initially from her appearance alone, and this young man is given credit spontaneously for being "manly."

Learning by identification with the parents is also equally important. Sex role identification is important in two ways in marriage. First, if the child identifies well with his same-sexed parent whom we consider an emotionally healthy well-adjusted person, then this child will carry these acquired healthy personality traits into his own marriage later. If, on the other hand, his same-sexed parent is poorly characterized, an alcoholic, an overly controlling individual, a weak-willed person, or has some other personality flaw, this child will have a poorer and less stable character to take into his marriage. This is illustrated in case 1 in which Mr. P.'s father was epileptic and unable to work to support his wife and five children. His wife worked and managed the family as well. Mr. P. did not obtain a good masculine role identification from his father. Poor feminine role identification is well illustrated in the next five cases. In these cases it can be seen that Mrs. B., Mrs. W., Mrs. J., Mrs. H., and Mrs. C., do not accept the position of wife, homemaker and mother gracefully.

The relationship of the child to his opposite-sexed parent is the other important aspect of charactering. The male child learns about the opposite-sexed from his mother or mother substitute. He may have only one mother, but this mother leads him to similar ideas related to all women. (Sisters are also important, but they are usually already identified with their mother so the effect is the same). If the opposite-sexed parent is well characterized and emotionally healthy, the child will identify such traits with this sex generally. If this parent is poorly characterized, is promiscuous, or is an alcoholic, the child will make a general identification from this learning experience. When the time comes for mate selection, there must be a basis for deciding what desirable traits a spouse should possess. This basis is the previous experiences and identifications with the parents, that all important learning process. This principle operates behind situations of repetition compulsion in which an individual has chosen a marriage partner who is so much like his opposite-sexed parent that he cannot escape this

reliving, even to the point of disaster. Cases 7 and 8 illustrate this situation extremely well, but this principle is present in all of the 15 cases.

An individual may overcompensate for weaknesses he believes to exist in his sex-role character. He selects a mate with whom he can establish a relationship which is just the opposite observed in his own family. If the father has been weak and passive, and the mother dominating, aggressive, and controlling, their son may enter his marriage determined to be the family boss. Cases 1 and 9 demonstrate this situation clearly. Mr. P. and Mr. B. have thus become so compensatingly dominating that their marriages are in jeopardy; however, their basic passive, inadequate personality structurally becomes apparent affecting their marriage and children adversely.

In case 10, J. W. shows his overcompensation in promiscuity and philandry. He has failed to establish a workable identification with either parent, and his basic masculine character is lacking.

Cross-identification is possible. A girl who patterns herself after her aggressive father to the exclusion of her mother can become an aggressive woman interested in a career in a competitive field, and disinterested in homemaking. If she does marry, she may be dominating, controlling wife and mother. R. P. (Case II) has assumed control over the lives of her children and others far beyond a normal motherly concern.

Spending one's life in a strife-filled family in which one or both parents were poorly characterized, may be modified with strong intellectual will. Intentionally he may use his intellect to improve his pattern of living. He establishes what is called a reaction formation. The original identification with the parents is not erased but is only suppressed by conscious intellectual control. R. M. (Case 12) lives within the structure of a fairly successful reaction formation, having grown up in a discordant home. He suffers occasional break-throughs under stress. In case 4, Mrs. J. had maintained her reaction formation successfully for nine years of marriage before reverting back to her mother's pattern of promiscuity and alcoholism.

Characterlogic difficulties are outstanding in twelve of the fifteen cases. In only two of the marriages, Cases 13 and 14, is one of the partners psychotic (severely disorganized). A psychosomatic disorder is the only sign of discord in the last case, number 15, and in this case a

reaction formation can be noted. Mrs. F.'s rejection of her feminine role is represented by somatic expressions.

In addition to the characterologic difficulties evident in almost all of the cases interviewed in this study, other facts are apparent:

1. Displacement of the partner's conflicts to the children can lead to behavior problems and/or psycho-physiologic problems that baffle the parents. (Cases 6, 9, 11).

2. Lack of heterosexual-social experience before marriage has led to discord in several marriages. Often the girl is young and anxious to get away from an unhappy home. Cases 13 and 14 illustrate this type marriage resulting after a short acquaintance. Mrs. R. (Case 13) married at fourteen. Mr. S. (Case 14) married the only girl he had ever known very well, after a courtship by correspondence. Other cases exhibiting the same situation are shown on table 1.

3. Some couples complain of the problem of sexual adjustment. This problem is not in actuality the basic cause of strife. Goode⁴ believes that they are, rather, created by the underlying conflicts and tensions of marriage. "Consequently, unsatisfactory sexual relations as a cause of divorce would seem to be of relatively minor importance." This has been validated by psychiatrists working with marital problems for many years; sexual compatibility of the partners is not necessarily equated with love. Mates who respond well in their sexual relationship may have a stormy unhappy marriage, while in others the wife may not respond well in sexual union and yet their marriage is based on mutual love and is very successful. Sexual adjustment may be the barometer reading indicating a successful voyage in marital seas, but "it ain't necessarily so."

4. Excessive use of alcohol is common in the cases interviewed but again this is more correctly considered a symptom of characterological difficulty with resulting marital discord than a cause of it.

5. A selfish, uncompromising, narrowminded attitude expressed by both partners is almost universal in the problem-marriages studied.

6. Most of the pairs lack imagination, creativity and insight. They are quite colorless and empty.

Case #1

"My husband has accused me of having an affair with our neighbor," reports Mrs. P., nearly in tears. "We gave a New Year's Eve party in our home and after that he was convinced that I was interested in another man. There is absolutely no basis for such thoughts, but I can't make him believe me. He talked to our minister and then arranged an interview. Once I was there I cried the whole time, and when I got home, I was depressed for days."

Mrs. P. is 30, 5'5" in height, and definitely plump. Her appearance is neat and her manner quiet and pleasant, although she becomes tearful readily. She has been married for ten years to Mr. P., who is a man of nearly the same age and height as she, but who is slightly built with a small head and a generally wizened appearance.

Mrs. P. tells, "I am from an Iowa farm. After high school graduation, I went to work as a dental assistant in a nearby town. While on a little vacation at the lake, I met Mr. P. He was on furlough from the Army. When he went back to camp we corresponded and he would come and stay at the farm when he had leave. We were married about a year after we met. I liked him for his quiet reserve; but there was no real physical attraction."

Mr. P. is one of a family of five children from a small town in Wisconsin. His father was a machinist but had to retire from his work because of epilepsy. "Dad kept a little tinker shop in the garage where he did repair work and collected junk until he got too sick. He got no compensation so Mother worked and we kids did too. Three of us were able to get through college." The lack of a strong father figure means that Mr. P. had a poor masculine identification, was strongly influenced by a hard working and dominating mother. Mrs. P. says, "I liked my mother-in-law at first, but gradually came to dislike her. She always made unnecessary demands on my husband even though her four other children lived much closer. He telephones her every week and goes back to visit often."

Mr. P. made a decisive break from his mother in leaving his community to attend college in Tennessee. However, after two years there lack of money forced him to return to Wisconsin where he was graduated as a civil engineer from the School of Mines, an all-male school where the emphasis is strictly on science. He seems to have been endowed with little imagination or stimulated to little creative thinking.

⁴Goode, Wm. J., *World Revolution and Family Patterns*.

The Free Press of Glencoe, Macmillian Ltd. London, England, 1963, pp. 377-378.

It was after college that Mr. P. served in the Army and subsequently was married.

Behind his quiet reserve is a hard-driving compulsive personality. Mrs. P. says, "My husband works very hard. When he was made assistant manager at a branch office of the highway commission, the boss resented having him there. He didn't need any assistant. But then the boss had a heart attack and Mr. P. had to take over both jobs. It finally gave my husband a perforated ulcer. After that he began to change from quiet to even more quiet. He tells me a few things but often I learn about important things that have happened from someone else. For example, when he accepted a position here and we were going to have to move from Fort Dodge, my father told me about it." Their communication is poor in most areas, which makes Mrs. P. resentful. "He treats me like a 'haus-frau' all day and then expects me to be his loving bed partner at night! I need more than that!"

The P.'s have five children, ages 8, 7, 6, 4, and 3. Mrs. P. says, "I didn't want this big of a family this fast. Since my first baby, my periods have been irregular. I've tried to keep track of the cycles carefully, but I just seem to get pregnant very easily. After the third baby, I used a diaphragm for a while but then stopped. After number four, my doctor gave me a prescription for birth control tablets, but I never did have the prescription filled."

Mrs. P. tries to avoid sexual relations with her husband and finds him distasteful. "I don't like to have him touch me or even kiss me." When asked if this feeling could be related to fear of another pregnancy, she replied "yes, I think that is possible." It is even more possible that her resentment is based upon lack of affection displayed by her husband, his rigid compulsive behavior, and the stifling control he exerts over her. She tells, "My husband thinks there is something between me and our neighbor because he can make me laugh, and my husband can't. Our neighbor is the kind of friendly person who teases and amuses everyone. My husband can't understand that."

Mr. P. cannot understand why his wife is sexually unresponsive to him; he credits this to her clandestine love affair with another man not realizing that the dominating characteristics of his mother, which he has assumed, have choked his wife's outflow of affection.

Mrs. P. suggests by her overweight state a dependent personality seeking loving support and not finding it. She is not taking oral con-

traceptive therapy. Note in the narrative her reluctance in filling a prescription to prevent pregnancy. While initially her sexual adjustment was satisfactory, she has been overwhelmed by a severely domineering but basically weak husband, resulting in frigidity. Therefore, both are passive and dependent; however, he is compensated and she is not.

Case #2

"I didn't know enough about my husband when we married. I wanted to wait a few more months, but he wanted to get married right away," is Mrs. B.'s lament. "We found out later we had nothing in common."

Mrs. B. is an asthenic colorless woman of 43. Her hair is a light brown, her face is pale, and she wears clothes in muted shades of tan and gray. Her tension is visible as she sits rigidly in a chair twisting her handkerchief. She speaks reluctantly, slowly, and softly unless she has to defend herself against her husband; then her eyes flash, and she is electrified for a few seconds.

Mr. B. is of the same height as his wife, about 5'5". He weighs 160 pounds and is a bit paunchy. He has dark, wavy hair, a deep suntan, and a flashing smile. He is relaxed and loquacious.

Mrs. B. says, "My husband always talks too much. We go to visit friends and he monopolizes the conversation for ten minutes at a time with his talk about insurance. I got so I hated to go visiting."

The couple was married in September, 1945. They had met at an air base in 1942 and dated a few weeks. Then Mr. B. went off to war. They had corresponded for a year when he sent her an engagement ring. After another year and a half, Mr. B. returned and in a few months they were married.

Mr. B. is from a large city in New Jersey. Until he entered the Army at eighteen years, he had little time for girls. "My best friend, Travis, and I would always play handball in our spare time and not worry about girls. Although my wife claims that she was shy when we met, I didn't know shy from unshy because I had nothing to base an opinion on. Oh, I met a few girls overseas, but that was different." Mr. B. in brief, was reared very unsatisfactorily from parents to grandparents to uncles and aunts.

Mrs. B. came from an Iowa farm, the oldest of five children, and the only daughter. "I was very quiet as a child; all of us were. Dad said little but mother was the talkative one. Mother has always been high strung. She would harp

at Dad constantly saying he smoked too much." Mrs. B. graduated from beauty school and worked as a beautician, a stereotype of a 'flashy' but stupid girl. She loved a young man named Mark at this time. They broke up over what could be judged a very minor misunderstanding: Mark stopped by at the farm unexpectedly to find her going out with another fellow and did not come back. Mrs. B. says, "The first year I was married I kept thinking it should have been Mark. I didn't love my husband. I'm better off though because Mark 'runs around'; he had to get married. His wife was pregnant later by another man." Mr. B. echoes her words, "She should have married this other guy. She was in love with him and not me. He turned out to be a no-good 'jerk'."

Mr. B. goes on, "The first year we were married, I came home one evening to learn that Mark had been visiting. His marriage had folded and he wanted some consoling. That made me angry, so I packed up and moved on to Minnesota. I should have called it quits that time; my wife didn't love me, but she called after a few days and said she wanted to come to where I was. She had said earlier that she didn't want children, but now she said she did. So she came and we had Bob nine months later, July 1947."

A few months after Bob's birth, Mrs. B. became pregnant again. "It was too soon. I went to a doctor to try to get rid of it! But it went full term and was born the summer of 1948. The child had water on the brain and died after thirty-four days. I felt so guilty about my earlier thoughts!" (Note: Reference to the child as it.)

In 1949 tensions between the couple were so great that Mr. B. left home again. This time Mrs. B. filed for divorce, but did not go through final formalities to make it official. She once reached Mr. B. again and wanted a reconciliation. Their second boy, Bill, born in 1951, was their reconciliation. Mr. B. tells, "Bill was only an accident. We had intercourse so seldom that he had to be. Most of the time that I was home I slept on the couch or in the basement." Mrs. B. says, "My husband thought I was cold. I guess I was. It hurt me the first years. Then I went to the doctor, but it still wasn't any better. My husband came home so late all of the time from his sales jobs that I was already asleep and he slept on the couch." She uses his late hours as an excuse to avoid sexual relations with him, and he provides the excuse, "I'd sit

in a bar for a couple of hours every night after work, no drinking, I don't drink, but just hanging around to avoid going home to face my wife."

Shortly after Bill's birth, Mrs. B. suffered an anxiety-depressive reaction and was sent to a hospital for thirty days. Again in 1954, Mrs. B. began divorce proceedings and again abandoned them before completion. The couple's youngest child, Bonnie, was born in 1956. "The next seven years were stormy until I finally left again in '63, and my wife obtained a divorce. I lived alone in an apartment. I was never interested in another woman. I was getting along just fine and I think she was too, without me there, until she called two weeks ago asking me to come back. She said she was very tired and nervous and needed my help with the children. So I went back."

Mrs. B. tells, "The first week that he was back was very nice. But then we began to get on each other's nerves again. Now we are back to where we started."

Her nervousness takes the form of a 'knot' in her stomach, tight pains in arms and legs, all anxiety-somatic equivalents. Her anxiety symptoms only worsen the relationship with her husband. "I tried to be understanding and patient at first but now when she gets nervous it makes me mad. If a person has a broken leg I can feel sorry. He can get some pills to fix him up. But this nerves business, I just get furious." Mrs. B. says of him, "He is short tempered, gets upset over every little thing. Then he makes me more nervous."

Mrs. B. is a compulsive person. "When I see something that needs to be done, I like to have it done right away. There are some big stumps in our backyard that have been there for weeks. My husband says that there is someone coming to haul them away, but no one shows up. Every time I take papers to the alley I have to go around them." Mr. B. is passive-aggressive in his retaliation. "Those stumps may stay there for a few more weeks. I won't be rushed. They are not hurting anything. She is like a general, barking out orders to me and the kids."

Mrs. B. has a poor feminine role identification. She is compulsive, frigid, and introverted; however, she is controlling, dominating, and nagging toward her husband. She says, "yes, we are better separated from each other." Yet she gets frightened, fearful, and apprehensive. She needs someone to cling to, at least figuratively, and that someone is her tortured

husband. Her marriage is a repetition of her parents. Like her mother, Mrs. B. suffers a cold martyr's existence.

Mr. B. is loquacious, friendly and likeable with a relaxed easy manner. **However, he is insensitive, selfish, short-tempered, and as cruel as she, only in a different way.** He continues to return to Mrs. B. after their separations; this presumably is related to his earlier childhood experiences but he does not indicate this.

Case #3

Mr. and Mrs. W. have been married for four years. Mrs. W. states her chief complaint as, "I am a Lesbian." She is a twenty-two year old woman, about 5'4" tall and of medium frame, with a short neck that gives her a muscular, powerful appearance. She has short dark hair, brown eyes and pencil-line plucked eyebrows. Her skin is olive, and she has excessive, dark facial hair. She wears an unbecoming black knit blouse and skirt which only emphasizes her lack of femininity. Very ill at ease, she speaks curtly and without elaboration.

Mr. W. is a red haired, freckle-faced young man of twenty-eight and is, in contrast, more sociable. He talks spontaneously and at some length about himself and his work, and a bit more hesitantly about his wife and their relationship. He is of about the same height as his wife with a clean, neat appearance in a white shirt and dark trousers. He says, "I talk better with strangers than with my wife; I guess it is because I know what she is going to say and she knows what I'm going to say before I say it." Mr. W., an Air Force M.P., is a strict conformist to the military regimen. "I'm the boss. When I 'slough off' the rest of the guys do too. So I have to be there before they are and leave after they have left." "You can't drink six hours before duty or have alcohol on your breath or people start talking." "It's against military code to stop at your house in a military vehicle, so I tell my wife if she wants to see me she can always come down to the office."

The couple was married on the day of Mrs. W.'s high school graduation. Mr. W. was in the Air Force at the time and relates that after their marriage, Mrs. W. told him of her former homosexual activity. "She told me about this neighbor girl (Donna) who kept bothering her. My wife was thirteen at the time. She told Donna no, for a while, but finally gave in. They hugged and kissed, but that was all." Mrs. W. mentioned, "After Donna, it was the high school health teacher." Donna continued to visit the

W.'s home after their marriage, although Mrs. W. told her, "I've had enough. I'm married now." Mr. W. says, "I told my wife I would ask Donna not to come back if she wanted me to, but nothing more was said. I knew what Donna was, but I just accepted her as a person with her own problems. My wife was done with all that."

Mrs. W. says that she participated in no homosexual activity during the first two years of her marriage. "But I started up again when we were transferred to this air base." Here Mr. W. is on an irregular day and night schedule. He admits that he pays his wife little attention, that they say little to each other and that they sleep together very little. "When I come home from the late shift, I sleep on the couch so I don't wake my wife."

This couple lives in a complete abyss from each other. Mr. W. says, "I don't like to go out and drink in a bar, people are always looking at you. I like to drink at home, but my wife does like to go out, so I say it's okay. She goes with Ruby and Ethyl downtown to a bar and have a few drinks and maybe someone will bring them home. Ruby and Ethyl aren't **that** kind. They are just good friends."

Mr. W. learned recently that his wife had returned to her homosexual behavior; he was apparently unaware of her activities during the past two years. He says, "most guys would want a divorce right now when they found out, but I'm going to stick by her until she works it out."

The couple has no children. Mr. W. says, "My wife did not want children for a while because of the way she was, but now she says she would like to have a baby when this is all straightened out." Would he like to have children? "No, I like other people's kids, but I'm afraid they might be deformed or something."

In his marriage, **Mr. W. fails to assume the aggressive masculine sexual role.** The fact that he refuses to become alarmed by the homosexuality displayed by his wife, indicates his passive, almost disinterested attitude toward her. The absence of a satisfactory sexual life and companionship in marriage, may have compelled Mrs. W. to return to her homosexual activity. Her original involvement in this kind of activity can be credited, in part at least, to her mother's repeated statement, "Men are **beasts.**" Thus, the passive, effeminate man has married a masculine woman, a complete sex role reversal.

Case #4

This is a case of a marriage triangle: Mr. and Mrs. J., and Mrs. J.'s lover, Dan.

Mrs. J. is 27, dark, petite, vivacious with luminous brown eyes. She walks mincingly, hanging her head. Mrs. J. sits nervously at the edge of her chair, and talks with a soft voice, smoking a cigarette or toying with her handbag as she speaks. She is a gentle, girlish person with an appealing sincerity.

Mrs. J. has one sister, Kathleen, who is two years older than she. Their parents are a pair of heavy drinkers. Mrs. J. says, "They were always that way ever since I can remember. They took Kathleen and me with them to the bar; we were less than six years old. When we got tired and begged to go home, they would want to stay longer. They gave us some money to spend at the dime store to keep us out of their hair." Their mother was chronically unfaithful to her husband and the two quarreled continually. About five years ago, Mrs. J.'s mother learned that she had cirrhosis of the liver. "The doctor said if she didn't stop drinking she would be dead in four to five years. Mother did stop for two years. During that time she couldn't stand Dad anymore because he was still drinking so she divorced him. She married another man, but had to obtain an annulment because he was still married to someone else."

Mrs. J. is very attached to the surroundings in which she was reared and especially to her mother. On two occasions Mr. J. moved his wife and the children to a farm outside of town. "But since my wife was so unhappy there, we moved back to her old neighborhood again." Mrs. J. has left the city twice in her life; the first time was when Mr. and Mrs. J. took a trip early in their marriage. Mrs. J. says, "I didn't enjoy that trip at all, I was so homesick." The second time was a two week vacation which Mrs. J. took with her mother, grandmother, and two of the children. "I had a very good time and was sorry to come back."

Both sisters were anxious to get away from home. Kathleen married at sixteen. Mrs. J. at fifteen, married Mr. J., a twenty-four year old soldier. "I was looking for someone to hook. I was engaged to a soldier but he went overseas. Then this soldier came along so I married him. I didn't love him, just liked him. But I think he loved me and still does. He drank a lot then. I can't remember anything we did together, but we'd only go where he could drink. I vowed I

would never drink because of what I had seen it do to people." Mrs. J. kept that vow for some time.

When the J.'s second child was three years old, Mrs. J. began to feel some discontent with her marriage. She was tense and anxious. Since her doctor suggested that she have another baby, she took his advice and had another child in 1962. However, this did not help her anxiety and restlessness. After she had taken this baby to the doctor for his six-weeks examination, Mrs. J. decided that she needed a drink. "I didn't want to drink alone, so I called my mother and asked her to join me. We were sitting in a bar drinking when I met Dan. He fascinated me and appealed to me because he was different from my husband. Dan called me after that and we went drinking. Now I am in love with him. Dan says he is forty-five, but he is probably more like fifty. He is a divorced man and thinks he is quite the ladies' man. I meet him in the afternoon twice a week, and we go to a bar and to his apartment. We always have an argument before I have to leave which Dan calls a tantrum; I guess I start it because it makes it easier to leave him. Then I go to a bar and drink because I feel so depressed. When I go home I talk my husband into buying another carton of beer and we drink that."

Mrs. J. continues, "My last baby, Loren, who is two months old, is Dan's child. My husband was a little bit suspicious at first because he didn't think it could be his; but I told him it was; so he didn't say anything more. Loren doesn't look much like our other three kids, at least I don't think he does. I guess I just feel guilty about the whole thing. Actually, Dan doesn't have much feeling for Loren or my other kids. Dan flirts with other girls when I'm with him. That makes me mad. He could at least wait until I leave. I'm sure that he had other girl friends, but I still love him." (She is incapable of love.)

Dan is short, stocky, and pseudo-suave. He has dark skin and dark graying hair, and dresses in a jaunty style. His attitude toward Mrs. J. is very condescending and controlling. "I am a friend of Mrs. J. and have known her three years. Her big problem is her tantrums, but I have straightened her out. She is 80 percent better now than when I first met her. Only recently could I begin to talk to her like an adult. When she said she was going to see a psychiatrist, I didn't like the idea. I don't approve of somebody who is not mentally ill going to a psychiatrist. They have a circle of friends who

can talk to them and help them out. If I had worked with her longer I could have gotten her 100 per cent straightened out. I flatter her as her husband never does. Her husband doesn't take her out. A husband should take his wife out at least once a week to a show or dinner. I tell Mrs. J. that she is pretty. Any woman appreciates that."

In late 1963, Mrs. J. was hospitalized for a nervous condition. "I was in the hospital for a week for my nerves. I wanted to get away from my husband for a little while, but I felt no better when I went home again."

In contrast to Dan, Mr. J. is in his mid-thirties, a blond-haired, fair-skinned man with a pronounced, winking, tic in his right eye. He is dressed neatly in wash trousers and a checked shirt but is uneasy and clumsy. He tells, "My parents are from the farm; they never smoke or drink. I didn't either until I got into the service. I finished the ninth grade and then went back to the farm to work. I guess I could have gone back to school after I got out of the army, but it just never occurred to me."

Mr. J. is very hardworking, putting in a 56 hour week as a mechanic and farming evenings and weekends. He is noticeably dull, however, in comparison with Dan, and is apparently unaware of his wife's unfaithfulness. He is concerned about her drinking. "I can hold it, but she starts mouthing off and gets just like an entirely different person. She is like her mother when she drinks, and her mother is no good. What I hate is the way she neglects the kids. They mean a whole lot to me. I love my wife, but I'll get a divorce if she doesn't stop drinking."

Mrs. J. managed well under a fairly successful reaction formation during the first nine years of her twelve years of marriage. She did not drink, was fairly content with housework and child care, and was a Sunday school teacher and active member of the Methodist Church. However, this reaction formation is crumbling and Mrs. J. is reverting to a pattern of living notably like that of her mother, a pattern of heavy drinking associated with promiscuity.

Mrs. J. tells of a dissatisfaction in sexual relations with her husband. "He is too fast. He doesn't give me a chance to enjoy myself. We haven't slept together for quite a while; I just had the baby two months ago. My husband has had back trouble and the couch is easier on his back. But Dan is different. It takes him two hours sometimes and I get pleasure from him

repeatedly. My heart pounds when I see him or when he calls, and I feel sick when we part. I have no such feeling for my husband."

Mr. J. is trusting, sincere, but unromantic; he is actually too well characterized and prosaic a man for Mrs. J. and she has become tired of him. It seems likely that if Dan drops Mrs. J., she will find another 'lover' much like him.

Case #5

Mr. and Mrs. H. have been married for six stormy, unhappy years. Now Mrs. H. is seeking help. She is twenty-four, a short slim girl with dark, dry hair worn at a medium length. Mrs. H. has an irregular reddish nevus on her right cheek which she frequently covers with her hand. Her manner is flippant and rakish, and she reclines mannishly in her chair as she talks, smoking continually. She wears clothes that are skin-tight, showing off her legs.

Mrs. H. tells, "My folks were too lenient with my two sisters and me. I was out with a wild crowd from a nearby town nearly every night all through high school, but they didn't say anything. We would be out 'til midnight during the week and all night on weekends." Mrs. H. had no close friends because her classmates at the parochial co-educational high school were all "snobs."

"I was engaged to a construction worker when I was seventeen; I had known him for three weeks. I broke the engagement after he was arrested and sent to a reformatory for stealing a car." After high school graduation, she worked as an egg candler. Mr. H. worked as a night attendant at a state mental hospital. "We had known each other one month and nineteen days before we got married. I was pregnant. Mr. H. left his job two weeks after our marriage. He changed suddenly. His character is mean and demanding and he brags a lot."

Mr. H. is twenty-four years old, tall and thin with dark hair. He dresses like a teenager in tight jeans and a casual shirt, and is like his wife in his air of self-assurance and his relaxed manner. He speaks emphatically and broadly, making sweeping statements that seem to him to cover the topic and require no further clarification saying, "Her folks are social outcasts." "Her two sisters are both tramps." Mr. H. was jailed on one occasion for assault of his wife. He has beaten her repeatedly, and she reports that his idea of discipline is to pick up the kids and throw them against the wall.

Mrs. H. says, "Our three children weren't wanted. They came too soon."

In 1963, there seems to be one bright spot in the marriage. After persuasion from his wife, Mr. H. took a position selling water softeners. Mrs. H. says, "I was tired of being left alone while he was trucking." Mr. H. earned a good wage; they bought a new car and a trailer home. However, after a few months, Mr. H. did not return home for a week. "He spent a week and almost a thousand dollars drinking in another town. He wrote bad checks on our bank account," Mrs. H. tells. "The trailer and car were repossessed because we didn't have enough money left to make the payments. I had no time for my husband after that, even though I lived with him for another year for the kids' sake."

In June, 1964, the couple separated; the children were put in a foster home. Mrs. H. went to work as a waitress in another town and she says, "That is when I started running around, going to bars, going to parties." She took up an association with another man, an unmarried truck driver whom she describes as "everything that my husband isn't. He reminds me of my father. He treats me like a woman should be treated."

Mrs. H. returned to her husband in December, 1964. He continued to be a bully. She reports, "Two weeks ago he called me all kinds of foul words in front of our friends — whore, prostitute." Evidence would indicate that he was not too far wrong. Now Mrs. H. wants a permanent dissolution of the marriage. "But I want to have the kids." However, Mrs. H. would be willing to give up the children if she could be allowed to visit them.

Other incidents help to clarify Mrs. H.'s character. Her husband reports that she had stolen \$150 from the church rectory where his mother worked. No formal charges were made. Mrs. H. poses for nude pictures and for pictures of herself and a male partner in a variety of normal and aberrant sexual positions. It seems somewhat antithetical when she says, "We can't get a divorce because that would be against the Catholic church's ideals."

Mr. H. mentions a girl friend he has on his trucking route through Montana. He describes her as "just a good friend — someone I can talk to."

This is the story of two weakly characterized young people with personality disorders, who, after a brief acquaintance and an unexpected pregnancy sought a Justice of the Peace and were married. Now after six years of marriage and three children, Mrs. H. has been hospitalized for psychiatric care, "to be cured of my running

around." It seems more reasonable that she wants to be cured of her marriage and relieved of her family responsibility so she can continue her promiscuous life.

Case #6

A year ago Mr. and Mrs. C. had their third child, a daughter. Shortly enuresis, encopresis, and visible increase in anxiety seized their second child, Tommy, seven years of age. Although he seemed to like his new sister and wanted to hold her, his mother reports, "Sometimes he surprised me by what he did. He would all of a sudden pound her on top of the head. Once I caught him pouring a bottle of pop in her face."

Even before Marlene was born Tommy had an excess of fears and complaints. Mrs. C. tells, "Ever since Tommy could talk, at about two years, he has complained of his feet hurting him whenever something goes wrong. He also had stomach pains which the doctor thought might be ulcers, but he couldn't prove it. Tommy has always had many fears. He is afraid of the dark; he won't go to the basement alone; he is afraid of the daylight; he is afraid to sleep alone."

Mrs. C. continues, "I think part of this trouble was caused by our oldest girl, Bev, who is fourteen. When we left her to babysit with Tommy, she would hide behind the furniture to scare him. They say that they hate each other." Recently Tommy has been treated by a psychiatrist for his fears and complaints; however, his parents' marriage demands a closer inspection.

Mrs. C. is 34, a tall, plain woman of medium build with short 'frizzy' bleached hair, and widely spaced teeth. She wears a cheap yellow cotton dress with a tight midriff. Her manner is cooperative and relaxed. "I am one of eight children," she tells. "Dad didn't ever say much, but Mother was very bossy. I quit high school when I was a junior because of an argument with my mother, and moved away from home. I came to the city and started to work as an egg cracker at a produce house. I had known Mr. C. from my home town. When he returned from the service, he looked me up. We went together for awhile."

Mrs. C. continues, "I got pregnant, but I really didn't want to marry him. I don't think that he wanted to marry me either, but felt that it was his duty. I wish that I would have just had the baby and not gotten married. I was seventeen and scared so we got married. My mother had

told me when I left home, 'If you get in trouble, don't come back and expect help'."

Mr. C., age 38, finished only the sixth grade. His parents had sixteen children and they were very poor. Mrs. C. says, "My husband will never tell me anything about his childhood, but I have heard him talking with his brothers about how it was at home. They said their mother would walk around the house in the dark carrying a butcher knife and acting very strange."

Mr. C. has an aversion to work; he has held countless jobs in the midwest and far west, but does not hold one for long because something always starts bothering him. "He would much rather have me work," his wife tells. "He can't stand to have the boss hanging over him telling him what to do. Once he told me that he was going to work for Swift and Company. So every day I'd pack him a lunch and he'd leave for work. But at the end of the month when it was time for a paycheck, he didn't have one. I found out that he never did have the job; he just went off somewhere every morning, ate his lunch at noon, then came back at night." Mr. C. also has frequent severe headaches for which he takes six aspirin at a time. He also has chronic stomach complaints of pain and hyperacidity.

His wife goes on: "I left him three times when things got so bad that I couldn't stand it, and I started divorce proceedings each time. My husband came and begged me to come back; he made a lot of promises. I felt sorry for him so I went back."

Mr. C. is, according to his wife, a cold and hostile man who shows no affection. "Bev wanted so much for her dad to like her, but he would only ignore her. She came back from a visit from Uncle Dan and his wife and she asked, 'Why doesn't Daddy ever put his arm around you the way Uncle Dan does with Aunt Ellen?' I couldn't give her a good reason. I think he loves the children, but he is very short-tempered with them and gets upset whenever they make a little noise."

Mrs. C. related that their sexual relations are not satisfactory. "I guess that is my fault. I can't reach a climax and that makes him mad. But it is impossible for me to enjoy it when he shows me no affection. I never refuse him because I see it as a duty that must be performed. But when Tommy got to be afraid of the dark and came to sleep with us, it was a good excuse for me to sleep with my daughter instead."

Mr. C. has been drinking more heavily recently, demanding that he have a six-pack of

beer every evening. "He wants me to drink with him and says 'I must think I'm too good for him.' I don't want to drink at home in front of the children. It's only when he has had a few drinks that he softens up and talks to me a little. Otherwise when I try to tell him about what I have been doing or about some gossip, he says, 'What does that make me?'"

Mrs. C. has learned that her husband has been unfaithful to her on a couple of occasions. "I have let them pass. But when several of his brothers got to be about 45 years old, they went off on a prolonged, big fling, sort of like it was their last chance to prove they were men. I'm afraid that will happen to my husband. If it does, I'm leaving him for good. I won't stand for it. I was sorry when I got pregnant with this last baby because I was planning upon the first two finishing school so I could get a divorce. But now I will have to wait a few more years."

In this example the marital conflict causes deep-seated, psychological symptoms in their second child, Tommy. This man and woman were not ready for marriage emotionally, being forced into it by their untimely sexual procreation. Once married, they put forth no real effort to make it successful. Mr. C. is emotionally cold, extremely passive (feminine), and schizoid. Both are characterologically weak, psychologically immature, and reversed in their sexual role. One can bet that the third child, the baby, will be emotionally disturbed also.

Case #7

Mr. and Mrs. S. are a couple in their late twenties who have seemingly no overt marital friction; Mr. S. has been hospitalized with acute anxiety related to his work seemingly, but actually related to his domineering, cold, pushy, obese wife.

Mr. S. is twenty-seven years old, small and wiry at 5'4" 120 pounds. He has a youthful, good-looking face with dark eyes and dark hair worn short. Mrs. S. tells, "My husband is self-conscious about his size. He thinks he has to work twice as hard to make up for his small size. He is very concerned about his appearance."

Mrs. S. is of about the same height as her husband, but weighs close to 180 pounds. She says, "I'm concerned about being overweight. I ask my husband if it bothers him, but he says no. I weighed 145 pounds when we were married, but I just seem to put on weight so easily." (Even at 145 pounds she would have been overweight.) Mrs. S. controls all the conversation

and tells her husband constantly what move to make next.

Mr. S.'s parents were divorced ten or eleven years ago. Mr. S. claims, "it was a surprise to me. I didn't realize that there was anything wrong with their marriage. I was about seventeen years old at the time. My brother, Dick, stayed with my Dad while my mother kept my youngest brother, Jim, and me." Mrs. S. relates, "My husband's mother began living with another man after the divorce because she claimed Jim needed a father. I say it was just because she needed a man. Anyway she married again and had a baby at the same time our baby, Tom, was born three years ago."

Of her mother-in-law, Mrs. S. says, "My husband's mother is really 'bugging' him. I can tell the minute I see him that she had been to visit. He is nervous and tense and he just looks at me as if she had been to visit and had been talking about me. She treats him like a baby; pats his hand and smooths his hair. She's always talking about religion and why he should go to church. She is a fine one to talk about religion when she's living with that man!" (Note: mother and wife similarly control patient).

At the time of their marriage, Mr. S. was working as a gas-station attendant. He continued in that work for two years, then switched to a position in a meat-packing house, but was laid off. He then worked in the maintenance division of the city police department. Eight months ago he found a better paying position as a delivery man for a soft drink company. Mr. S. says, "At first I was worried about the figuring. I was afraid I wouldn't get it right. But I got over that." However, his wife contends that he continues to be concerned about the figuring. "He can do mathematics all right, but not fast." Gradually Mr. S. has become concerned with all aspects of his job — the arithmetic, the mechanics of moving the stock, and customer contracts. In the last few weeks he has been so anxious that he cannot think clearly and has developed psychosomatic stomach complaints. "I have to drive around the block a couple of times trying to remember where to go. I look at the shelves and my mind is a muddle. I can't think what to do. Several times on my route I got a terrible pain in my stomach and had to call the boss to get the rest of the day off."

Mr. S.'s brother Jim, died three years ago at the age of fifteen after a five month illness. This was about the same time that the S.'s had

their baby, Tom. Mrs. S. says, "Tom has been a sickly child. He has had repeated ear infections and sore throats, and has been hospitalized three times for pneumonia. We have no insurance. That worries my husband too. I'm afraid that it will upset him if I tell him I'm going to look for work." Much of the baby's difficulties is due to Mrs. S.'s ineptness as a warm, loving mother. Mrs. S. is a cold, frigid, and rejecting woman.

After two weeks hospitalization, Mr. S. is returning to his former position. "I haven't even thought about finding a different line of work. I'm going back to my delivery job. I think I can do it."

Mr. S. has a passive dependent personality structure and is plagued with strong feelings of inadequacy for which he tries to compensate with arduous devotion to his work. Great expectations have been heaped upon him by his wife, who means well but who has assumed a matriarchal role in their marriage. This acute anxiety results from his inability to meet those expectations. As he and Mrs. S. left the hospital after his dismissal, Mr. S. said, "I am going to do whatever my wife says. She knows what is best for me!" (Although explanations to him and his wife were contrary to this statement.)

This case illustrates repetition compulsion where the wife assumed a masculine, controlling role in her marriage very much like the husband's mother, much to the detriment of this passive, schizoid man. Here, again, is complete role reversal.

Case #8

It appears that Mr. A. has come from a line of hardworking farm folk whose men are domineering and harsh, and feel that a show of affection is a show of weakness. His wife tells, "My father-in-law was a cross man; a grouch. My husband takes after him."

Mr. A. is a tall, raw-boned, six foot three, gray-haired, sun-burned man of 52 years old, and one of seven children. There is an odor of alcohol on his breath. He is expressive, alert, but defensive; however, he soon warms to the interview.

Mrs. A. is eleven years younger than her husband, a tiny woman whose 5'2", 110 pound frame appears all the smaller beside her husband. She has short medium brown hair and a square suntanned face. Mrs. A. is very shyly emotional, her eyes readily filling with tears, as she stifles an occasional sob. Testing would probably show her to be dull, normal in in-

telligence. She is the eldest of five children and did not get along with her mother because "she was too bossy." Mrs. A. had completed ninth grade when she quit school and began to do domestic work. Mr. A. had completed eighth grade before he returned to farming. "Parents didn't care much for education in those days. Times were different."

Mr. and Mrs. A. had known each other since childhood, having been reared on farms in the same community. After going together for two years, Mr. A., 27 years and Mrs. A., 16 years, were married. The couple had \$39 as their only asset at the time of their marriage. "But I knew a lot about farming." Mr. A. tells, "We borrowed money to get started and had to struggle. But now we have three farms, four tractors, other equipment, hogs, steers — we've done real well for ourselves."

While Mr. A. works in the fields, his wife does her share at home. "I have worked very hard keeping house, raising the kids, doing chores. I don't mind that; but my husband has never given me any credit, any kind words. In the twenty-five years we have been married, he has given me three gifts: an ice cream freezer, an electric butter churn, and a tractor for my own work last summer. I didn't ever go shopping to buy a lot of things. I made my own clothes and clothes for our daughter, Marlene."

Mr. A. says, "Yes, she works too hard—housework, chores, drives the tractor. Then when she is done with her other work, I have seen her put the spray-can on her back and go out to spray the weeds around the barn." "Do you ever tell her how much you appreciate her?" "Oh, I guess I have once or twice; she knows anyway. She can have the car whenever she wants it or can buy anything she needs."

Last year was the twenty-fifth anniversary for the A.'s. They were traveling in the Ozarks and had stopped at a motel for the night. Mrs. A. says, "I asked him if we could get dressed up nice and go out for dinner. He said we were dressed nice enough for anybody. I wanted to ask about a picture show, but he just bought two bottles of whiskey and sat in the room and drank and paid me no mind!"

His wife tells, "Six or seven years ago my brother-in-law got 'polio' and had to leave the farm; he bought a retail liquor store in town and sold the liquor to my husband for half price. He really wasn't a bad drinker then. But about three years ago the new feed dealer and Mr. A. got to be friends. This man likes to drink and he took my husband along. Where

before a trip to town for feed would take three hours, now he stayed away all day. My husband began to take many trips to the hog shed. I knew there was only feed in the shed, but when I saw him go in there every ten minutes, I knew I'd better take a look. What I found was a gallon jug of whiskey. He started taking beer along when he went to mend the fence and he would have to have beer and wine for supper."

This heavy drinking occurred approximately at the time when the A.'s only son, Dennis, was graduated from high school and chose to return to the farm instead of going to college. He helped his father farm their land for a while, but then indicated that he thought they needed more land. "I bought another quarter section and let Dennis farm that. But then he got even bigger ideas from a friend of his who had some feeder steers and more land — this kid's father didn't even own his land. I told Dennis that we had enough. Then he wanted to buy a big new tractor and cultivator. I said go ahead. But he told me I would have to sign the note. I said, 'No dice — pretty soon we will be \$20,000 in debt and you will get some other notion and take-off. If I knew you were going to stay around, maybe I'd do it.'" Mr. A.'s supreme authority was being questioned by his fledgling son, and he found it hard to take; he couldn't face his son's progressive competition.

By December, 1964, Mr. A. drank excessively. On one occasion, he asked his wife, "Are you going to have club at our house on Thursday? Well, if you do, I'll raise the roof even if I have to get the shotgun to do it." Dennis tried to defend his mother, and he and his father came to blows. Another time Mr. A. had been drinking heavily and announced that he was leaving the farm. Mrs. A. tells, "He left and I followed him to see where he was going. But I lost him and after about an hour I returned to the house. The door was locked and he was inside. I stood out in the cold for a while. When he came to the door he hit me and said, 'You will never know where I went! You are no good. You are always telling me what to do!'"

Shortly after that the family had Mr. A. committed to a state mental hospital to attempt to alleviate his alcoholic paranoid state. He remained there for two months before he arranged his own release through a lawyer. "I was never an alcoholic and I'm not one now. I shouldn't have been in that 'nut' house. I'd take a drink when I wanted to then, and I'm going to keep on as long as I want and as long as my health holds out. Dennis and the wife put me in

there just so they could show me that they can get their own way over me." He harbors a deep resentment against his wife and son for their action. "When I got back, I told Dennis to leave the farm. I don't want him back again except for a visit, and then for no more than a week."

Mr. A. reveals his jealousy of the close relationship between his wife and son with this statement: "She and him was always siding and talking together." Mrs. A. tells, "Dennis had no schoolmates since he was the only one in his grade for eight years. He needed someone to talk to after school, so I'd listen. We would sit in the barn and talk. I guess my husband overheard and felt left out, but he was always too busy to talk."

Dennis has left the farm and gone to the southern part of the state to find work. Mr. A. says, "The wife feels real bad that he is gone." A month after Mr. A.'s return from the hospital, March, 1965, Mrs. A. took an overdose of aspirin. She recovered without difficulty, but was caught by her husband trying to do the same thing again three days later. On Sunday, May 23rd, she decided to run away. "I was going to go to the state hospital. I was not sure what I would do when I got there, but I only knew I wanted to get away. I didn't get far before I got so tired I had to stop and call my husband to come and get me. All I want is to have my family back together again."

Mrs. A. did not get along well with her daughter, Marlene. They had frequent arguments and occasional fights. "I was glad when Marlene finally got married and moved away."

Mr. A. is a paranoid, hostile, cold, dominating, authoritarian figure who expresses little overt affection for his family. He resorted to heavy drinking when his position as family head was questioned by his son. He is envious of the close relationship which exists between his wife and son, from which he is excluded. His driving Dennis from home serves two purposes: to remove the cause of his anxiety over loss of authority, and to inflict suffering on his wife for her over-protective love for her son.

Mrs. A. is a passive, dependent woman who has had little affection from her husband throughout their marriage, and has figuratively seduced her son as a result. Now the son has been sent from home and she is left without support. In her hardworking, compulsive manner, she did not represent a feminine romantic figure herself. She, like her mother, drove her daughter from home with constant criticism and possessed her son as her only love. She is a

martyr, anxious and depressed, while her husband is a paranoid alcoholic. Basically he lacks confidence in his masculinity. Again, the role responsibilities are not met in this marriage; the two children have been seriously traumatized. Mr. and Mrs. A.'s world is based on a sadistic (Mr. A.) — masochistic (Mrs. A.) relationship.

Case #9

Ben F., the fourteen year old son and only child of Mr. and Mrs. F., was a partner in a school break in on the evening of Tuesday, May 25, 1965. He and a schoolmate entered their junior high through a back door and tore through the building, scattering books in the classrooms and damaging desks and library furniture. Ben was questioned repeatedly by the police after the incident because of his previous record of school misbehavior, and finally on Tuesday, June 1, admitted his part in the break in. He had been under great tension and anxiety during the whole previous week, and when taken to the principal's office, after a classroom prank, he became wholly irrational and violent. He remembers, "All I could see in that office was flying fists." Ben was admitted to the psychiatric specialty care unit of a local hospital as an emergency patient.

As described by his mother, "Ben was a nervous child. He cried easily and is a chronic fingernail biter. He is a regular Dr. Jekyll and Mr. Hyde." The boy has had a problem of over-eating; at times his father padlocked the cupboard doors to keep him away from the food. Ben is large for his age, 5'8" and overweight, weighing 170 pounds. He is somewhat effeminate with a round childlike face, curly dark hair, and an innocent expression behind his glasses. He has a slight lisp quite similar to his mother's.

Ben's school record was satisfactory until entering the fourth grade. There he became a behavior problem, lost interest in his lessons, and received low grades. "His fourth grade teacher seemed to have something against him," his mother said defensively. From that time on he became worse each year, bullying younger students and disturbing classroom order. The family moved three times to different parts of the town so that he could be enrolled in different schools. His antisocial behavior was, therefore, unwillingly encouraged by his parents.

The boy has no close friends. His parents disapproved of his general circle of companions. He does not engage actively in sports, and when

urged to do so by his parents, he said he would not because he did not know how. "He has very little self-confidence," Mrs. F. said.

Mrs. F. is a tall large-boned woman in her late thirties with a pleasant face and sincere manner. A congenital ambylopia exanopsia with lateral strabismus of her left eye is evident, as well as a lisping speech impediment. She was reared on a farm by an adoptive, 50 year old mother. "My mother was much older. We had nothing in common. I often wonder how state adoption laws would allow such an age difference." Mrs. F. left the farm at sixteen to live in town and work as a secretary. At eighteen she joined the WAC's and met her future husband at an Army Post where he was stationed. They were married in March, 1950, and Ben was born May, 1951, while Mr. F. was overseas. Explains Mrs. F. "I don't think my mother-in-law approved of his marrying me. I once overheard her asking him why he had to go and marry a girl from the East coast. I think they had someone else in mind for him." In 1953, Mrs. F. delivered a stillborn baby girl and further attempts at conception were not successful.

Except for a few brief periods, Mrs. F. has held full-time employment since their marriage. She says, "My husband wants me to work because he thinks we need the income." Before Ben was of school age he stayed with his paternal grandmother while Mrs. F. worked.

Mrs. F. was hospitalized for one week in 1959, for nervous headaches, and again in February, 1960, for ten days because of depressive reaction. Ben says, "My mother got sick over my cutting up."

Mr. F. is a tall, muscular, good looking man about 40 years of age, with a granite-like expression that rarely alters. He offers an occasional grimace that might be interpreted as a smile. Mr. F. was born and reared in Iowa, a younger member of a family of eleven. His early home life was dominated by a paternal grandmother. Mrs. F. relates that her husband entered their marriage determined to be the ruling and dominative member of the family. He carried out this policy by inflicting severe and often unreasonable punishment on their boy. Mrs. F. says, "He would make Ben stay in his room for weeks." Encouragement and praise for Ben from his father were rare. When Ben brought home his report card with a 'B' where last time he had a 'C', I would praise him. His father would ask him why he didn't do better," Mrs. F. says.

The parents argued about the techniques of discipline of their son; especially, after a social service counselor indicated that Mrs. F. must insist that her husband be less severe with the boy and give him more support. Mr. F. is a hostile, paranoid person who refuses to acknowledge the effect his behavior has had on Ben. "My husband says he understands that he may have been too harsh, but he doesn't change."

Ben's reaction formation against the hostility and aggressiveness in himself has not been successful, and he has displaced his own hostility on his school associates and teachers. The rebellion and 'acting out' which might be expected to occur in an older adolescent at puberty occurred at a much younger age with this patient. Ben has been denied a healthy masculine association with his father and has had to obtain most of his support from his mother. Mrs. F. speaks of him as "my son." She expresses a willingness to do anything to help Ben regain his psychological stability, even if it means the loss of their home and new automobile. Her husband is more concerned about their social image. Mrs. F. says, "Ben comes second in my husband's mind."

This is a case of a fourteen year old boy who appears well-adjusted and happy superficially, but who actually harbors latent hostility which is expressed in the school break in. He is the product of a marriage in which the partners are not overly at odds, but where the task of constructive, supportive parenting is lacking.

The father is a highly compensated but passive, unmasculine man, who feels masculine only when being positive to his son, while the mother has overprotected and psychologically seduced her boy, causing his severe rebellion. Both parents are immature and both operate with a high degree of reaction formation with lack of masculine and feminine charactering respectively. By the way, guess who 'runs' this family albeit, neurotically — Mrs. F., obviously.

Case #10

Mr. L., age 29, is a dancer. He spent five years in the glittering world of a California ballroom-dancing studio before returning to his native midwest in 1961.

He is the eldest son of a high school athletic coach, who expected his son to excel in high school sports. "But I was too slight to be good in football and too short for basketball," Mr. L. relates. His childhood identification with his father was poor, and he was not especially fond

of his mother; his parents are now separated. Mr. L. is a problem child "grown-up," and recalls being treated by a psychiatrist when he was very young.

Mr. L. is a short broad-shouldered young man, 5'6" tall, with a pleasant smile and exceptional manners. He dresses well, and wears his hair very short. He clicks his heels together and bows as he greets a young lady. The lack of emotional tone is evident as he speaks, however, of his unusual and promiscuous life and his two marriages. He began sexual activities at a young age, but failed to achieve a healthy mature emotional satisfaction.

"After two years of college, I found the mid-west dull, so I went to California and got into dancing. That is an entirely different world. The day begins at five in the afternoon when the 'squares' are done with work and start coming in for their lesson. The day ends in the early morning hours after a party someplace."

In 1957, Mr. L. was forced into marriage with a young lady who was pregnant. "I'm not sure it was my baby; it could have been. There was no affection between us, but we lived together two years before getting a divorce." Shortly after 1959, Mr. L. began living with another dancer who was rebelling against a fractured home and a mother who had remarried several times.

The couple lived together for two years, and when she became pregnant and gave birth to the baby in the summer of 1961, Mr. L. persuaded her to give up the baby for adoption which she did! "We thought that we weren't ready for the responsibility of a child." They were married that fall. "But we didn't get along after our marriage as we had before. It was different somehow."

Mr. and Mrs. L. returned to the midwest to set up their own dance studio. "My wife was good on the business end of the plans and also taught social graces. I taught ballroom dancing," Mr. L. tells. "We both wanted to return to college to get a degree. We tried having one of us attend school full time and the other, part time for a semester, and then reversing. It didn't seem to work out." Mr. L. continued his promiscuous pattern and his wife also became restless. She returned to New York in December, 1964, to work in her father's office. Mr. L. continues to live in their home, a converted coach house on an old estate.

Now Mrs. L. writes asking her husband to see their lawyer to discuss property settlement. He says, "If she wants to come out to negotiate, she

can. I'm not going to the lawyer." As this marriage between two thirty-year old "adolescents" is about to dissolve, Mr. L. comes to a psychiatrist hoping to learn "my subconscious feelings about my wife." "I want to know if I should try to patch up our marriage again."

Mr. L. has an obvious sociopathic personality disorder. He has an immature set of social values, a distinct lack of affection, and a weak superego. His string of feminine conquests may be necessary to prove his masculinity, but his inability to establish a permanent healthy relationship suggests a latent homosexual pattern. His two wives appear to be his female counterpart. They too lack identification with an emotionally healthy parent and are characterologically structured poorly also. This is coming to be a pattern in the "beat society," with strong existential overtones. These people live and love intimately, so they think, but, in actuality, they are robots moving in their cold, make-believe world.

Case #11

Mrs. T., age 42, is a tall, anxiety-ridden, sophisticated-appearing woman with grey-black hair, brown eyes, and dark olive skin. She has come for psychiatric help on the insistence of her husband who, upon learning of her sneaking, conniving business dealings with their money, was acutely angry. Mrs. T. cashes in stocks and bonds to 'bail-out' her eldest daughter, Sharon.

Mr. T. is 43 years of age, 5'11" tall, and weighs 160 pounds. He is a good-looking man, very interested in the out-of-doors and enjoys his work as a sales representative.

Mrs. T. is the only child of a humorous Irish mother and a hardworking German father. Her father worked for the Indian service in Utah. The family moved quite often, and Mrs. T. attended Indian school until high school. She was interested in a medical career, but became disenchanted with the idea after her first pre-medical college year. This interest in medicine suggests that Mrs. T. may have some aggressive, masculine strivings.

Mrs. T. tells of her previous marriage to a soldier who was killed in the North African campaign; however, her hesitancy and paucity of specific details suggest that this marriage was only a fabrication to give her baby, Sharon, born in 1942, a name. Mrs. T. joined the Waves during the war, and later met Mr. T., whom she married in 1943. It can be deduced that Mrs. T., acting seductively, was able to win his affection. While Mr. T. states emphatically that their

sexual relations are wholly satisfactory, the behavior of their children indicates a poor family patterning.

The oldest daughter, Sharon, showed early signs of dys-social personality development. She stole money from her mother's purse, lied, and gave evidence of early promiscuity acting out which led their doctor, correctly, to suggest placement of the girl in a foster home. Mrs. T. refused to allow such placement. Sharon quit high school during her senior year and began a concatenation of promiscuous associations with a variety of men. She confided in her mother that she got the most pleasure from Negro men. Mrs. T. cashed in some of her husband's bonds, and borrowed on his insurance in order to cover up for Sharon's misdeeds. Sharon finally did marry; her choice of husband is a professional 'pool shark', a 'hustler'. Sharon's behavior is the expression of Mrs. T.'s latent strivings; Mrs. T.'s anti-social unconscious desires and wishes.

The T.'s second daughter, Barbara, conceived in the second marriage, was well-behaved and a good student. However, while she was in high school, her mother took a special liking to her boy friend, Andy. Andy had come from an unhappy home situation. In her sympathy for him, Mrs. T. invited him to live with them, trying to control yet another individual in her "arachnid" manner. When Barbara graduated from high school, she was pregnant with a baby fathered by Andy, a situation prompted by Mrs. T.'s seductive behavior with Andy and Barbara, precipitating an unfortunate early marriage.

The youngest child, Chuck, now seventeen, has been controlled and overprotected by his mother. He is now becoming rebellious in order to escape; he also has been obviously over controlled and seduced by his mother.

In this marriage, there is a reversal of sex roles. Mr. T. is more passive while Mrs. T. is controlling and aggressive. She seems to love but actually hates; she is a rotten, maternal apple in this family barrel.

Case #12

Mr. D. is an anxious 30 year old hired man and the father of five children. He is 5'8" tall, weighs 145 pounds, is moderately kyphotic and wears crew-cut brown hair.

Mr. D. had a very poor life during childhood. His father, now 52 worked as a mechanic, farmer, and school janitor. He is a good man, but Mr. D.'s mother, also in her 50's, was the town scandal when he was a boy. "She was a

common whore, and had intercourse with a whole lot of other men," Mr. D. tells. "And she accused Dad of being unfaithful himself. I was caught in the cross-fire. Mother asked me to keep tabs on Dad and report to her, and Dad asked me to watch Mother. I don't think Dad was so bad, but the whole town knew what Mother was. My older sister left home for Colorado after high school. She got out before all this big trouble began. She was real flirty like Mother and has been divorced eight years already. She married a career service man who finally couldn't take her running around." Mr. D. continues, "Four year ago my folks got a divorce. Then Mother began to bring men home to spend the night. My little sister was still at home. She got the wrong idea about growing up. When she was fifteen, she got in trouble with a married man. She gave the baby up and now is married to another no-good. Only my brother, four years younger than I am, seems to be all right. He stayed out of our folks' problems and didn't let anything bother him." (Mrs. D., however, says that this brother is a very nervous person.)

Mr. D.'s mother married again. "Both my mother and her new husband were heavy drinkers. They finally went to the state hospital to get dried out. Her husband tried to kill himself last summer by sitting in the garage with the door closed and the car running. Mother called me and I went over and hauled him out into the air. He nearly died."

Mr. D. quit school at the end of ninth grade. "I couldn't get algebra and besides I wanted to learn mechanics; they didn't teach that at my school. I didn't ever go back for my report card so I don't know if I passed the ninth grade. I'm sorry now that I didn't finish high school. You really need that to get ahead."

Mr. D. worked as a gas station attendant until enlisting in the Army at eighteen. He served in the graveside registration section during the Korean War. He was honorably discharged at 21 and married shortly after, working as a hired man on farms since then. "Anybody can be a hired man, that doesn't take any talent. I would like to get out on my own, but I can't get any money. No banker is willing to lend me any."

Mr. D. has been treating an ulcer condition for several years. "It feels like there is something walking around in my stomach. Food doesn't help. It's never better and never worse. All the medicine I've taken was no help either."

He drank heavily while in the service. Mrs. D. tells, "I stopped writing to him for awhile because he was drinking so much and having such a wild time. He drank a lot the first year we were married, before our first baby. I filed for a divorce from him and moved out for a few days." Mr. D. says "I missed her so much and I knew my wife meant what she said, so I stopped drinking."

Mrs. D. is 28, a small, shy, pretty woman with ready tears. She is dressed neatly, and sits primly on the edge of the chair. Her father was an alcoholic who beat his wife and six children. However, after spending two months at the state hospital, he has been much improved. Mrs. D. tells, "Mr. D. was the first boy I ever dated. There were others in between, but we were finally married. My family didn't approve of the marriage because of my husband's background."

Mrs. D. and her three sisters had no sex instruction at home. Menstruation was a surprise to them. "Our mother just gave us the supplies and told us how to use them. That was all. My sister thought she would get pregnant if her boyfriend took the belt off her dress. Neither my husband nor I knew anything about sexual relations when we were married."

Six years ago, one of Mrs. D.'s sisters, then ten years old, claimed that Mr. D. exposed himself to her in the hay loft. Mr. D. denied this, but it caused relations to be strained even further between him and his in-laws. In October, 1964, he pinched the same sister on the breast with the comment: "What have you got there?" She was upset. Mr. D. claims, "She asks for it, sitting around the feed store all the time with her legs up in the air. She knows that everyone who comes in, looks at her."

The event which brought the couple to the psychiatrist occurred on June 25, 1965. Mr. D. was working as a hired hand on a farm. On this day, the farmer and wife were gone, but the teenage daughter was outside, in her pajamas, washing the car. Mr. D. came by the house and she invited him in for coffee. He pinched her breast. She issued an ultimatum, either Mr. D. leave the farm, or she would. Mr. D. was fired. Now Mrs. D. wants to know if her husband is mentally ill.

Mr. D. says, "My uncle and my brother-in-law, do that kind of stuff all the time and no one thinks they are sick. I think it's partly because they have some money."

The couple has practiced withdrawal as their sole contraceptive measure. She was aware of

other techniques but did not try to use them because of rumored side effects, for example that contraceptive pills cause cervical cysts. Recently Mrs. D. had a heart-to-heart talk with her married sister about sexual matters. The sister enlightened Mrs. D. on some of her beliefs and disbeliefs. "Some of the things that my husband has been doing I thought were vulgar and wrong. But my sister told me they were all right. I thought a wife was only supposed to endure sex for her husband's pleasure. I was satisfied before, but now I begin to wonder."

Mr. D.'s behavior is sexually aberrant. Considering his family background, it can be seen that he is living on a partially successful reaction formation. These occasional breakthroughs probably carry little weight in the light of the temptations offered by the young ladies each time. He is superficially a hard working, conscientious young man. Both Mr. and Mrs. D. entered their marriage with little sex knowledge and some deep-seated inhibitions. The couple was advised to use contraceptive tablets since this practice is in harmony with their church. Both partners in this marriage are operating with a high degree of reaction formation. Also their marriage is, in large part, a repetition of both their former unhappy lives.

Case #13

Mrs. M. is a 20 year old matron who married at fourteen; a small, slim, tom-boy type girl, with light brown hair and fair skin. She speaks angrily and with hostility, pointing an accusing thumb at her husband frequently. Occasionally she will recall some adventure the two have shared and in the telling she "chortles" sarcastically.

Mrs. M. was adopted at seven months by a couple in their fifties who had a sixteen year old son of their own. Her adoptive father died when she was seven, leaving the family a \$100 a month pension. "We were very poor. Mother told me often that I was a burden. I had to get my clothes at the Goodwill. I had no friends at school; I guess because I didn't have any nice things. Mother was very strict. She made me go to church three times a week (Jehovah Witness), and I couldn't go out of the house in the evenings even to babysit." (She lies inconsistently.)

Mr. M. is 27, a dark-skinned, dark-haired, tall, burly man. He has two large patriotic tattoos on each arm, and wears a black shirt, jeans and western boots. His wife remarks, "My husband has gotten hard of hearing in the last year or

so." However, his blank expression and puzzled "Huh?" may be attributed to his preoccupied, dissociated state, rather than to an actual hearing loss. He is restless and uneasy, finding it difficult to sit still while his wife relates their difficulties.

Mr. M. is one of five children. Mrs. M. reports, "They were very poor. My mother-in-law was pregnant all the time, just like me. He lived in a rough neighborhood. In fact, when he was in grade school, he was hanged by some neighbors and had to be cut down by the police." Mr. M. finished the sixth grade and started in the seventh before quitting permanently to do odd jobs. "Whenever anything happened in school they would always blame me," he tells. "Sometimes I was guilty, but not always. Finally I decided that if I was going to get the blame, I might as well do the damage, then I got expelled." (early paranoid behavior)

The pair met each other through a friend. Mr. M. was seemingly very gentlemanly and politely took his future wife home by taxi from across town. She lied and told him that she was eighteen, although she was only fourteen; he lied, saying that he was nineteen, when actually he was 21. Mrs. M. says, "I just couldn't believe all the bad things people told me about him. I knew he had been married before and had a daughter and was divorced. I knew that he had been in the Air Force for less than a year before he was discharged as unfit for service."

After the couple had dated for a few months, they were celebrating some event when Mrs. M. drank "a couple of highballs" for the first time that evening. "The next thing I knew I was in jail, and the police wanted to hold him for rape. But I wouldn't press charges because I knew it wasn't true. Our lawyer said to get married. We had never talked about it before but we decided we would." They lived with Mr. M.'s parents for awhile. "I didn't know a thing about marriage, and when I got pregnant three months after we were married, I was afraid. I had never been near children, and now I was having one of my own. But after two months, I lost that baby. That same year I had another miscarriage. Then a year later I had our daughter, Louise. The next year John was born and two years later, Ronald was born. I was always pregnant. My husband wanted to be on the go all the time. He had no time for a fat, pregnant wife."

Mr. M. has worked irregularly since marriage. He attempted to jump from an office building

three years ago, and tried to stab himself in 1963. He has spent six months in a Veteran's Hospital and now is under continuous medication with frequent supportive psychiatric check-ups. The family lives on his service disability pension.

Mrs. M. describes their home life: "My husband is under foot all the time. The kids are brats. Our oldest girl wants to run away, so I can't leave her in the fenced-in yard. I used to love them, but now I'm not sure. My husband can't stand noise, especially, when he is trying to record his guitar playing. He gets very angry. I used to keep myself up but not anymore. Now I don't even bother to make the bed for days."

When asked about future plans, Mrs. M. foresees that she will continue to be a drudge, trying to keep track of her three troublesome children and annoying husband. He comments, "I never make plans; here today, gone tomorrow."

Mr. M. is a border-line psychotic, and has been most of his life. He married a very young girl who was emotionally and totally unprepared for marriage, and who had very little social associations from which to judge men. Neither partner is emotionally mature enough to make their marriage more than tolerable. As a matter of fact, but not surprisingly, Mrs. M. has recently eloped from the family and no one knows her whereabouts, but there is a young man about town also missing. She left the children with her husband who is now living with another young woman, whom he met in a tavern while dressed in his cowboy garb playing his guitar. Both are empty, affectionless robots who seem to stumble through life upsetting themselves and others.

Case #14

Mr. Y. is a portly, 54 year old high school principal of medium height with a pompous manner. He comes from a family of six children whose parents were firm and loving.

Mr. Y. enlisted in the army shortly after Pearl Harbor, but was injured in a two car collision before being shipped overseas. "I was hospitalized for several months and I got very lonely, so I started writing to the only girl I had ever known very well. We had grown up in the same neighborhood and, although we hadn't dated too much, I knew she was a nice girl. When I was dismissed from the hospital and discharged from the service that fall, we were married."

Mrs. Y., now 45, is small, dark, and pretty. Her mother she describes as "a crabby old war-horse," while her father was very passive. She is one of four children. She is as hostile and suspicious as her mother, expecting to control her husband's every move.

Less than a year after their marriage, Mrs. Y. became suspicious of her husband's activities. She wrote him a typed anonymous letter accusing him of philandry, which he claims was entirely unfounded. Nothing further came of the episode. When Mr. Y. began work with a public high school in New Jersey, his wife became extremely anxious because she considered the people in the community to be very promiscuous. They stayed there for seven years before she finally persuaded her husband to find another position elsewhere. Mrs. Y. has especially strong feelings about aggressive, handsome, women school teachers; she thinks all of them are very loose morally. (Note: same type of woman as she.)

The couple has four children who seem to be emotionally healthy and well adjusted, probably because of the influence of Mr. Y. who has remained quite calm and understanding, hiding their severe conflict. Only recently when she has displayed more acute paranoid behavior, has he sought psychiatric consultation for both of them.

This case illustrates how a young man with little previous acquaintance with girls could select what he considers to be a very "nice young lady" for his wife. She accuses him of constantly frequent fornication, presently with the girls' gym teacher, in his office, gymnasium, and in public parks. She is a sadistic, latently homosexual woman who is attracted to his supposed paramours. He is the male "martyr" who is being fed to the lions. There is not much principal left in him and, naturally, he cannot carry his work load.

Case #15

Mrs. K. was hospitalized June 12, 1965, after a severe attack of nausea and vomiting. Her husband reported, "She got up, had some breakfast, and then started getting sick again. She vomited, danced around, did the jig, foamed at the mouth, acted really 'funny', so I brought her here." This is the fifth time Mrs. K. has been hospitalized for this complaint, the first occurring in July, 1960, and the others assuming a summer and winter pattern since, to the present episode.

The first three admissions were diagnosed as acute labyrinthitis, but the lack of supportive findings and the persistence of the complaint led to psychiatric investigation.

Mrs. K. is a tall, thin lady of sixty-seven, with white hair and blue eyes. She wears ill-fitting dentures that cause her some speech difficulty, and tinted glasses.

Her husband, also white-haired, is a very tall and bulky man of sixty-three. He has a large nose and deeply suntanned skin. His manner is belligerent, gruff, and impatient; he resents inquiries made into his life and considers doctors incompetent. "Why can't they find what is behind all this? I thought we had good doctors in this town, but I guess we don't. I'm fed up. I'm ready to take my wife to an expert."

Mrs. K. is one of a family of ten children. Her father worked for the railroad. "She did not return to school after the eighth grade because she didn't like the teacher," her younger sister, Mary, explains. "Often times later she would ask why she wasn't forced to return to school. She has regretted it very much."

Mr. K. says, "My wife has told me how she had to do all the work when she was at home. The other sisters got nicer clothes than she did."

The K.'s were married in 1925. Mary, Mrs. K.'s sister, relates, "My brother-in-law drank from the time they were first married. He would often go on a 'toot' for days. In 1926, my sister had a 'female operation.' She couldn't have children because of it." The records are not available from this operation, but because Mrs. K. continued to have her menstrual periods it was obviously not a hysterectomy. Did Mrs. K. wish she had a family? Mr. K. says, "Yes, here lately she mentioned it." Mary tells, "My sister loves children; she took care of some in her home for a while. They considered adoption at first, but because of my brother-in-law's drinking, my sister thought it wouldn't be good for a child." As a matter of fact, Mrs. K. avoided having children because she is a self-centered narcissistic martyr who couldn't possibly invest herself in a child.

In 1949, Mrs. K. began work as a meat trimmer at a packing plant, and worked there until the plant closed in 1964. "My wife never wants to hurt anyone's feelings. She would come home from work and tell about the lady next to her on the line, who would reach in front of her to grab the biggest pieces of meat. I told her she

should just let her knife slip a little once and she wouldn't have that problem any more. But she won't get angry about things, keeps them inside. Maybe that's the answer to her problem. She is not interested in others. It's all right if the neighbors come to see her, but she will never go to visit. She doesn't visit my relatives, and she gets carsick when we go anywhere. If she wants to go any place, we always go but she doesn't want to go very often."

Mrs. K. has no special hobbies or interests. Her sister, Mary, says, "After her retirement, I tried to get her interested in the yard and handwork, but she would rather do nothing. Her husband now does most of the washing and ironing, and housework." Mrs. K. has remarkable secondary gain for her primary hostility for her husband resulting in conflict and an upper gastro-intestinal syndrome.

During her January, 1964, hospitalization, Mrs. K. was referred by her internist to a psychiatrist. When questioned about a possible emotional background for his wife's illness, Mr. K. says, "I'd ask my wife 'What are you doing? Are you worried about something?' and she'd always say that she had no worries at all." He quickly volunteered, "We don't have any fights. Our marriage is good." Mary adds, "They care for each other very much. My brother-in-law sat in her room all day and evening throughout her hospitalization."

Mrs. K. is a repressive, introvertive, unhappy woman whose chronic vomiting is a psychosomatic manifestation of her displeasure with her husband. She is now making him suffer in exchange for the many years that she suffered from his drinking and her resulting childlessness.

How do they fit together? Well, certainly not lovingly, but neurotically. They are much the same personality profile; he is a compensated, but basically weak, passive, immasculine man, who finds comfort in the bottle, while she is superficially "lady-like" and capable, but basically unloving, weak, and unfeminine. This type of neurotic marriage never dissolves because of their need to continually act out against

each other and other figures of importance such as doctors.

DISCUSSION AND SUMMARY

Our results reveal this fact: Marriage partners with poor character structuring, succeed in marrying each other and making each other quite miserable. (See Table I).

In each marriage, the staff and distaff are also closely related in their difficulty in masculine or feminine role identification, and this is almost completely related to character structuring, as one might expect. Reaction formation (intellectual control) covers over the basic character defects in varying degrees in each spouse, and attention is urged to the fact that this is utilized in an amazingly correlated degree in each couple. (See Table I). Repetition compulsive action (behavior of repeating one's life pattern) is also very strong and, in fact, utilized to a very high degree, strongly congruous in each spouse (also Table I).

Socio-economic level determined previous to marriage, based on Hollingshead's two factor index (occupational position and education) is also very closely correlated. In our series there is a good scattering of socio-economic classes, ranging from Class I (+4) to Class V (-3, -4) See Table I.

We are in complete agreement with Ian Gregory who states: (1) affection, (2) effective communication, and (3) compromise, is almost totally lacking in marital partners who have poor character.³ In a nutshell, these men and women cannot possibly invest themselves in each other.

We think, moreover, the partners are often interdigitated neurotically, i.e. one partner quite punishing (sadistic) while their spouse suffers (masochistic). One might think these partners would have dissolved their marriage early. Surprisingly, they do not because they need each other to interact with neurotically and/or behaviorally.

³Ian Gregory, *Psychiatry*, Saunders and Company, (1962) Philadelphia, Pennsylvania. P. 511.

TABLE I

Cases		Character	Role Identification	Reaction Formation	Repetition Compulsion	Socio-Economic Level
1.	M	-2	-2	+3	+3	+2
	F	-2	-2	+2	+3	+2
2.	M	-3	-3	+2	+3	+2
	F	-2	-2	+3	+3	+2
3.	M	-2	-2	+1	+2	-2
	F	-4	-4	0	+3	-2
4.	M	-3	-3	+4	+4	-1
	F	-2	-2	+3	+2	-1
5.	M	-4	-4	+1	+4	-3
	F	-4	-4	+1	+4	-3
6.	M	-2	-2	+1	+3	-3
	F	-2	-2	+1	+3	-3
7.	M	-3	-3	+1	+3	-2
	F	-3	-3	+3	+3	-2
8.	M	-3	-3	+2	+3	+2
	F	-3	-3	+2	+3	+2
9.	M	-3	-3	+3	+3	+3
	F	-3	-3	+3	+3	+3
10.	M	-3	-3	+2	+3	+3
	F	-3	-3	+2	+3	+3
11.	M	-3	-3	+3	+3	+3
	F	-2	-2	+3	+3	+3
12.	M	-3	-3	+3	+3	+3
	F	-3	-3	+2	+3	-3
13.	M	-3	-3	+1	+3	-4
	F	-3	-3	0	+3	-4
14.	M	-3	-3	+3	+3	4
	F	-3	-3	+3	+3	4
15.	M	-2	-2	+2	+3	-1
	F	-2	-2	+2	+3	-1

TABLE I
UTILIZATION

		Positive					Negative			
		100%	75%	50%	25%	Average	25%	50%	75%	100%
Character Structuring	}									
Role Identification										
Reaction Formation		+4	+3	+2	+1	0	-1	-2	-3	-4
Repetition Compulsion										
Socio-Economic Level	(HOLLINGSHEAD'S CLASSIFICATION (Classes))									
	(V (-3, -4); IV (-1, -2); III (0, +1, +2);									
	(II (+3); I (+4))									
	(Correlates I-V classes with socio-economic levels)									

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CLINICOPATHOLOGICAL CONFERENCE - SIOUX VALLEY HOSPITAL

From the Intern and Resident Teaching Conferences of the Sioux Valley Hospital, Sioux Falls

John F. Barlow, M.D.¹

Pathologist — Editor



William O. Rossing, M.D.²

Internist — Discussor

CASE HISTORY

This 25-year old Caucasian male had symptoms dating back nine years when he had a ruptured appendix removed. After the operation he developed loose stools 2-3 times per day. These gradually increased in frequency over the years to 12-14 per day. The stools became more watery, yellow and "fatty-like" in nature. He was treated with sulfa and tetracycline. He lost 35 pounds over the period. He had some polydipsia but no polyuria. Proprietary bile salt and enzyme vitamin preparations did not relieve symptoms. Outside laboratory studies included the following: hemoglobin, white blood count and differential, bleeding time, BSP, alkaline phosphatase, protein bound iodine, bilirubin, and chest, colon, skull and bone films, electrolytes and cold agglutinins within normal limits. Albumin was 2.0 gms% and globulin 2.1 gms%. Uric acid 7.4 mgs%, cholesterol 135 mgs%, prothrombin 15%, 17 ketosteroids and 17 hydroxycorticosteroids 2.1 mg%, (normal 8-20 mgs%/24 hrs, and 3-10 mgs%/24 hrs.). LE preps were negative. Past history and family history were non-contributory.

Physical exam revealed a chronically ill, asthenic man 6 feet 5 inches in height and weighing 106 pounds. Temperature, pulse and respirations were normal. Heart and lungs were within normal limits. Abdomen was flat without tenderness or masses. He wore glasses but no dislocated lens or eye abnormality was found. He did have long fingers and toes. The testes and prostate were small. The pubic and axillary hair were normal in amount and distribution. The external genitalia were normal except for the small testes.

Stool examination for ova and parasites and bacterial pathogens was negative. Febrile agglutinins were negative. Stool fat was increased. Stools for occult blood were trace to 2+. Fasting

blood sugar was 58 mgs%, BUN 10 mgs%, cholesterol 90 mgs%, sodium 134 meq/L, potassium 3.1 meq/L, albumin 1.9 gms%, globulin 2.3 gms%, hemoglobin 8.7 gms%, hematocrit 33%, white count was 4,200 with 39% polys, 59% lymphs, 1% basophils, and 2% monocytes. Several polys were hypersegmented and there was moderate anisocytosis, poikilocytosis, and macrocytosis of the red cells. The platelets were adequate. Sed rate was 10 mm/hr. Reticulocyte count was 1.0%. U/A was straw colored, turbid, specific gravity 1.010, pH 5.5, albumin 2+, occasional rbc and wbc in sediment. Uric acid was 10.6 mgs%. BSP was 18% retention. Prothrombin time was 28 seconds with a control of 12.5 seconds. The prothrombin time was 14 seconds after injection of parenteral vitamin K. Partial thromboplastin time was prolonged but also became normal on parenteral vitamin K. Glucose tolerance showed FBS-93 mgs%, 30 minutes-99 mgs%, 1 hour-100 mgs%, 2 hours-53 mgs%, 3 hours-62 mgs%, 4 hours-78 mgs%. Protein bound iodine was 5.4 micrograms%. Thorn test was interpreted as normal. Calcium was 7.3 mgs%, phosphorus 4.0 mgs%, pituitary gonadotropin was less than 6 units (normal 6-50 units), D-xylose was 0.7 gms. excretion per 5 hour (normal 4.1-8.2 gms/5 hr.). The 5-HIAA (5 hydroxyindolacetic acid) in urine was negative. Upper G-I series was interpreted as negative. ECG was within normal limits. A diagnostic procedure was performed.

CASE DISCUSSION

Dr. William O. Rossing: I think we can all recognize in a rather swift perusal of the protocol, the fact that this represents a case of a profound malabsorption syndrome occurring in a young individual. It then becomes our problem to determine whether this represents a primary malabsorptive state under which one could consider the chronic forms of tropical and nontropical sprue and the so-called adult celiac disease, or whether the problem is that of a secondary malabsorptive state which has

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many and varied pathogenic mechanisms. Let us enumerate the causes of secondary malabsorption. First, there are those which produce intrinsic bowel wall alteration — tuberculosis, regional enteritis, amyloid disease or lymphoma; secondly, there are the diseases which produce lymphatic obstruction of the intestinal tract such as Whipple's disease and again the lymphomatous diseases; thirdly, there are anatomic alterations usually of a congenital or post-surgical etiology among which would be considered diverticula of the jejunal or ileal segments, enteroenteric fistulae or the postgastrectomy state. This is an abbreviated categorization of the secondary malabsorptive states and one could extend further under each group; however, I have selected these as the best representatives of specific types.

The symptoms of this illness date back to the age of 16 when a ruptured appendix was removed. We have no history of any symptomatology referable to difficulty with bowel function, diarrhea, or poor growth and development in childhood. This would suggest a juvenile or childhood celiac disease syndrome. Symptoms apparently developed gradually following the removal of the patient's appendix and progressed in severity through the years, resulting in extensive weight loss. If one notes that this patient was extremely tall and weighed only 106 pounds, one can appreciate the extreme malnutrition which must have been present at the time of his original evaluation. We might suspect arachnodactyly or Marfan's syndrome. He wore glasses for some form of refractive error, but there was no demonstrable dislocation of the lens. Our attention is consequently being directed to the possibility that this patient may have represented a form fruste of Marfan's syndrome which is a congenital defect of the connective tissue of the body resulting in defects in elastic tissue. This defect is most noticeable in the medium-sized and large arteries resulting in aneurysmal dilatation of the great vessels and occasional dissection of the aorta. It should be noted that the dislocation of the lens which is the primary abnormality of the eye in this syndrome may be extremely slight and detectable only with the use of a slit-lamp. No comment is made in this case of the presence of a heart murmur suggestive of aortic insufficiency which is most common with an aneurysm of the aorta located sufficiently proximal to the root of the aorta so as to impair close approximation of the aortic valve leaflets. There is a notation that the testes and prostate were small. There are

low 17-keto and 17-hydroxysteroid and also low FSH levels. These findings would suggest hypopituitarism. We note, however, that this patient developed excessive stature and that there is apparently no failure of the development of the secondary sexual characteristics. If there had been infantile external genitalia, associated with his height, one might consider the possibility of a hypogonadotropic eunuchoidism in which there is a simple failure to initiate puberty with other facets of pituitary function intact. In other words, there is an absence of FSH and ICSH (interstitial cell stimulating hormone). One may see various degrees of expression of this form of deficiency depending upon the degree of secretion of these hormones. For example, the so-called "fertile eunuch" has barely enough ICSH to stimulate endogenous androgen which, in turn, is sufficient to assist FSH in promoting spermatogenesis. However, the level of the androgen production is generally not high enough to cause significant somatic pubertal development.

In the presence of a severe malabsorption disorder one must be careful not to overinterpret the results of depressed urinary steroid values. These may be unusually low simply because of the profound starvation effect which occurs. The lack of ability to absorb amino acids from the intestinal tract and other nutrients produces a rather profound limiting effect upon the synthesis of the complex steroid hormones on this basis alone. Consequently, in any form of starvation one is likely to find abnormally low steroid levels in the urine just as in the opposite situation with obesity we occasionally find abnormally high levels of 17-keto and 17-hydroxycorticoids.

Returning again to the patient's history we note that symptoms developed at the age of 16 and at the time of removal of a ruptured appendix. Inasmuch as this procedure seemed to trigger the onset of symptoms, I would wonder whether the operation initially resulted in the removal of a simple acutely inflamed appendix or whether this might have represented symptomatic localization of an early regional enteritis which began to smoulder and extend itself in severity in the years to follow. Regional enteritis is prone to develop sporadically throughout the entire intestinal tract producing "skip" areas in which marked structural abnormality of the bowel wall alternates with a completely normal intestinal architecture. Frequent difficulty with fistulae formation is found. A diffuse form of regional enteritis

termed "ileojejunitis" has been described in which there is a rather constant and continuous involvement of the entire ileum and jejunum resulting in a rather severe malabsorptive state secondary to intrinsic bowel wall alteration. One can only be perplexed at the lack of abnormality which seems to have been present in the small bowel X-ray study which, according to the protocol, was interpreted as negative. It is difficult for me to imagine that any intestinal abnormality that had been in progress for a period of nine years and was of sufficient magnitude to produce a state of cachexia such as described here would not have produced some changes in the radio-graphic appearance of the intestinal tract. At least it would appear that we could rule out extensive diverticula, enteric fistula, regional enteritis or similar such anatomic alterations of that degree which should have been readily apparent with X-ray studies. May we see the films?

Dr. Bryson R. McHardy*: There were two upper gastrointestinal series taken six months apart. In retrospect, the second examination shows some increased transit time, thickening of the folds, and focal dilatation but this is all in retrospect.

Dr. Rossing: The history does not provide a basis for relating this to the post-gastrectomy state or other abnormalities such as an afferent loop. In these entities intestinal bacterial overgrowth occurs with consequent competitive consumption of vital nutrients, specifically folic acid and vitamin B₁₂ needed for the integrity of the intestinal mucosa absorptive mechanisms. One also notes that the replacement of digestive enzymes, bile salts and various formulas did not produce any significant improvement in the clinical symptomatology. This again suggests that chronic cholelithiasis, insufficiency of biliary tract function, or pancreatic insufficiency had no significant part to play in the production of these symptoms.

In evaluating the laboratory data we note the presence in the CBC of a mild leukopenia, a relative lymphocytosis, a mild anemia with macrocytosis and a correctible clotting defect which was improved by administration of vitamin K. Hypersegmentation of the white blood cells was also noted. The macrocytosis and hypersegmentation of polys is indicative of either a folic acid or vitamin B₁₂ deficiency. A normal polymorphonuclear white cell will contain 2-3 lobes but with significant deficiency of either

of these vitamins, one is likely to find 4-6 lobes in many of the granulocytes. The urinalysis revealed albumin which may be simply related to the starvation with loss of integrity of the glomerular basement membrane. The prolonged BSP and low cholesterol levels are also compatible with moderate hepatic dysfunction as the result of extremely poor nutrition. Specific tests for intestinal absorption demonstrate the classic flat glucose tolerance curve indicating little or no absorption of the glucose from the intestinal tract and low D-xylose excretion indicating also a lack of ability to absorb the simple sugars. One of the simplest laboratory techniques to make the diagnosis of steatorrhea is the microscopic presence of increased fat in the stool, using Sudan III stain. It is noted that this was increased in this case. The degree of abnormality is not quantitated for us. On a regular hospital diet which contains on the average of 50-100 gms. of fat per day, the normal individual will excrete 5-7 grams of fat in the stool per 24 hours. In the presence of steatorrhea stool fat is increased above these levels occasionally reaching from 12-25 gms. of fat per 24 hours. Quantitative fecal fat is an excellent test for diagnosis and management of the steatorrheic syndromes. Unfortunately it is an unpleasant test to perform. We are all familiar with the typical gross appearance of the steatorrheic stool which is usually silvery-gray in color and of creamy texture with a foul, rancid odor. The patient, himself, may comment about the presence of fat globules floating in the toilet water. The presence of a normal small bowel study by X-ray in the face of such extensive abnormality from a clinical and laboratory standpoint must direct our attention to the possibility of a primary malabsorptive state. The simple odds that any malabsorption syndrome may be related to a celiac or non-tropical sprue-like state are very high in that in any given series of randomly selected cases of malabsorption that I have reviewed, non-tropical sprue has accounted for 40-50% of the total number of cases. By virtue of the fact that the history does not indicate any geographical location that would predispose the patient under discussion to tropical sprue, we would then be left with the most probable diagnosis of non-tropical sprue. We note in this regard that there was no apparent response to antibiotic therapy which does tend to rule out tropical sprue, the blind loop syndrome, or even Whipple's disease.

The intestinal lesion of the primary malabsorptive state in its severest form is very

* Radiologist, Sioux Valley Hospital.

striking and obvious. The mucosal surfaces are completely flattened with short blunted villi. There is vacuolated cytoplasm and variable nuclear size of the individual mucosal cells. Hyperplastic crypts are scattered throughout an expanded lamina propria and there is infiltration by plasma cells, eosinophils and lymphocytes. The extent of the lesion varies considerably as does its specificity in location. The duodenal and jejunal area is characteristically involved. However, the incidence of ileal involvement is generally uncertain. The lesion of celiac disease in a child and idiopathic steatorrhea (and tropical sprue) in the adult is of similar appearance and has led many to the hypothesis that this may represent a single disease entity with both a juvenile and adult phase. Objections have been raised to this hypothesis, the first and foremost being that tropical sprue may act different clinically than celiac disease. We see this in the lack of response to the classic gluten-free diet in tropical sprue; the fact that tropical sprue does respond to folic acid and antibiotic therapy; the impression that short chain fatty acids tend to exacerbate tropical sprue and that hypocalcemia and hypoprothrombinemia are not as prominent in tropical sprue as in the non-tropical sprue. Generally speaking, there is less stool fat in the tropical sprue where the content seldom gets greater than 50% of stool weight. Also it is pointed out that the abnormalities resembling primary malabsorptive states are found in other diseases such as regional enteritis and post-gastrectomy steatorrhea. The pathogenesis of the small bowel lesion is not well understood and is felt to involve differences in the differentiation in turnover of intestinal epithelium. Recall the mechanisms which nature has provided for increasing the absorptive area of the bowel, the valves of Kerckring and the presence of villi containing the columnar and goblet cells. Generally the epithelial cells produce a closed barrier to the intestinal contents. At times lymphocytes and eosinophils have been seen to pass between them and to enter the lumen directly as well as particulate matter proceeding in the opposite direction entering the lamina propria. There is a state of dynamic equilibrium in terms of renewal of the intestinal mucosal surface. It is estimated that over half a pound of epithelial cells are passed or sloughed from the bowel wall daily and that the rate of turnover of the cellular components occurs once every 1.6 days. In idiopathic steatorrhea or non-tropical sprue, the epithelial cells fail to develop normal comp-

lements of enzymes that would ordinarily appear intracellularly during maturation. This would tend to impair normal absorptive capacity. Nutritional deficiency such as folic acid deficiency has been implicated in the etiology of this disease as well as the exposure to toxic substances. First and foremost among the toxins is gluten which has been well documented to be injurious to the majority of individuals with celiac disease or non-tropical sprue.

Gluten is found widely distributed in cereal grains such as wheat, rye, barley, and possibly oats and it was first discovered by Dutch investigators that the starch portion of these grains was harmless but that the protein fraction consistently induced relapses. Gluten itself is a very rubbery mass of protein which remains when wheat flour is extracted with water and neutral salt solution and which becomes sticky and doughy, a property which is of some importance in baking. Further investigation incriminated a component of gluten known as gliadin whose toxic effect appeared to be related to its glutamine content or a glutamine-containing peptide. Gluten-intolerant patients appear to be deficient in an intestinal mucosa peptidase that normally functions to catalyze the degradation of peptide derivatives of wheat gliadin past the point of toxic property to man. Consequently, it has been wondered whether sprue in itself may not represent a form of inborn error of metabolism. At any rate, the strict adherence to a gluten-free diet in patients with non-tropical sprue generally produces a rather dramatic clinical result with amelioration of symptoms and a prompt and progressive gain in weight, only to have symptoms precipitated again when any deviation or repeat exposure to gluten is reintroduced.

This patient was young at the time of onset of symptoms and with the absence of any history that would suggest childhood celiac disease, it would be unusual for non-tropical sprue to strike in this age group. Other etiologic considerations do not appear to be more appropriate.

I will close my discussion at this point by suggesting that this case may represent a diffuse ileojejunitis secondary to regional enteritis, realizing that in so doing I am bucking the statistical evidence and much clinical evidence that this may also represent a primary malabsorptive state such as non-tropical sprue. I do not believe that there is any underlying endocrinopathy and that the abnormal steroid

(Continued on Page 57)

(Continued from Page 48)

levels obtained are explained by the severe malnutrition. It would be interesting to speculate as to whether this patient does represent a form fruste of Marfan's syndrome, unrelated to the primary illness.

Dr. Rossing's Diagnosis

1. DIFFUSE ILEOJEJUNITIS (REGIONAL ENTERITIS)
2. IDIOPATHIC STEATORRHEA
3. MALNUTRITION, SEVERE
4. MARFAN'S SYNDROME

PATHOLOGICAL DISCUSSION

Dr. Barlow: The diagnostic procedure was a small bowel biopsy using a Crosby capsule. There are many different types of capsules used for small bowel biopsy. The Crosby capsule is one of the most common. (Figs. I & II.) It works on the principle of suction. The mucosa is sucked into a port on the side of the capsule.

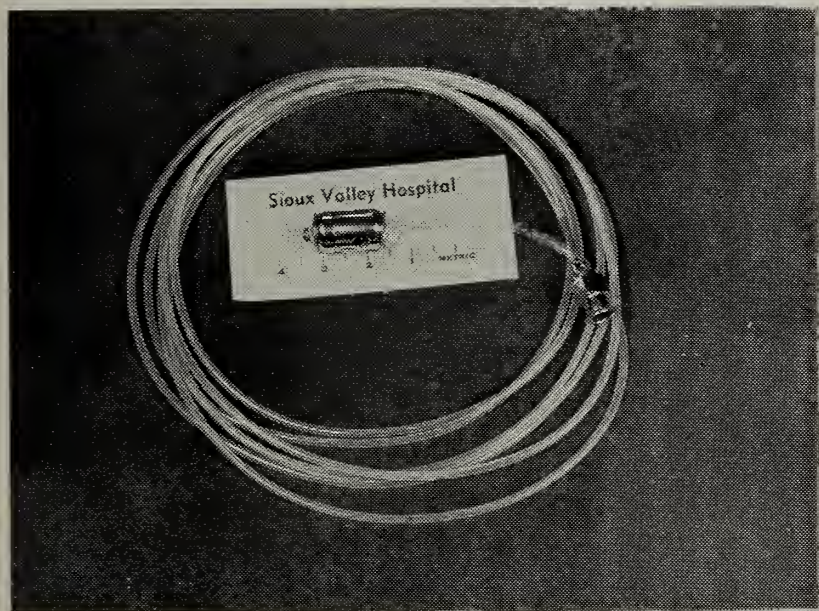


Figure I

Whole Crosby capsule assembled. Note port in side of capsule where bowel mucosa is sucked in.

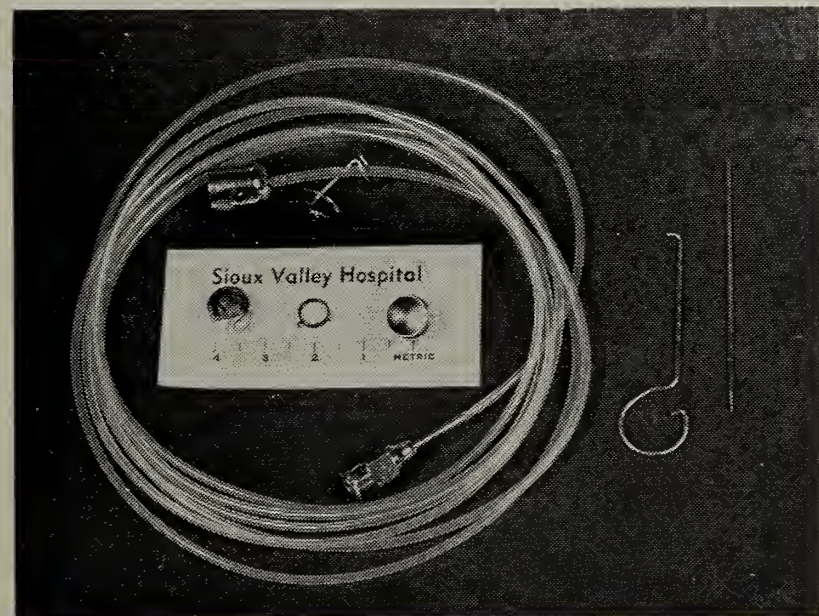


Figure II

Capsule disassembled. From left to right on the card are: the cutting blade, the spring on which cutting blade is attached, cap of the capsule. To the right of the picture are the key and needle required to load the capsule.

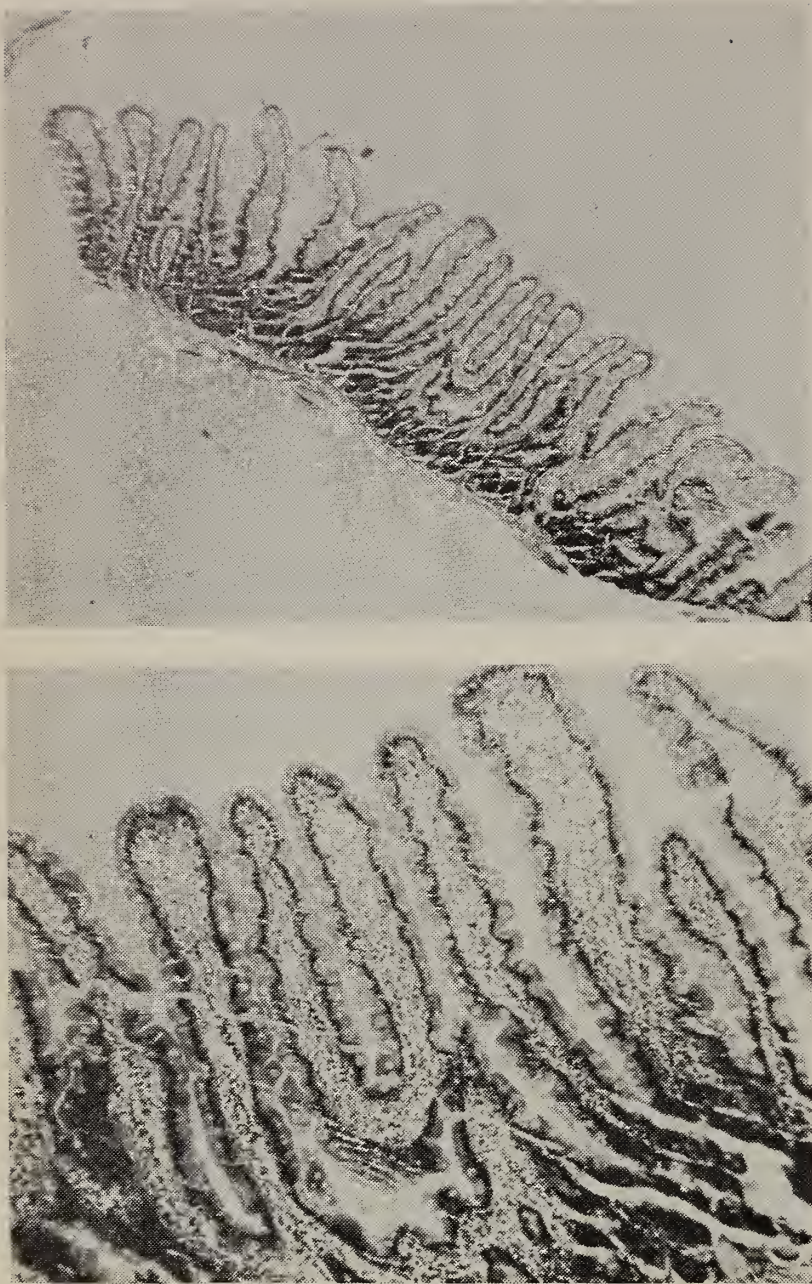
This suction triggers a knife blade on a spring and a piece of mucosa is snipped off. The capsule can be swallowed easily by most adults. After the capsule is in the stomach, the patient is placed on his right side. With a little manipulation and a little luck the capsule will pass the pylorus into the duodenum and jejunum where a biopsy may be obtained. Whether the capsule is in the small bowel can be determined in three ways: 1. Bile regurgitates into the tubing, 2. You can hear air injected through the tubing run down the small bowel, 3. X-ray localization if needed. The procedure is relatively simple and associated with minimal symptoms. Rare instances of massive gastrointestinal bleeding and bowel perforation have been described. To protect against the latter prothrombin time and partial thromboplastin time should be normal prior to biopsy. In cases of the malabsorption these values are often prolonged due to vitamin K deficiency. The tests can be brought to normal by parenteral injections of vitamin K. Diseases of the small bowel causing malabsorption such as amyloidosis, Whipple's disease, tropical and non-tropical sprue as well as celiac disease are easily diagnosed by the small bowel biopsy technique.

In this particular case a good specimen was obtained. The first two photomicrographs are from a normal small bowel biopsy. (Figures III & IV). The next two photomicrographs (Figures V & VI) represent this case and show marked flattening of the mucosa with absence of villi, elongated crypts of Lieberkuhn, and an increase of chronic inflammatory cells in the lamina propria. These changes were described by Dr. Rossing as the diagnostic changes seen in idiopathic steatorrhea of celiac diseases. The changes are severe and quite diagnostic in this case. This interesting case was one of Dr. Stephen Kahler's. What has been the follow-up on this patient, Dr. Kahler?

Dr. Stephen Kahler¹: I might add a few additional facts. First, a 72 hour fecal fat was obtained. The value was 16.1 gms/day as opposed to a normal of 5-7 gms/day. I went through very much the same differential diagnosis as Dr. Rossing. I favored the diagnosis of idiopathic steatorrhea, but was also surprised by the normal small bowel X-rays. In this disease especially with these advanced changes usually there is a characteristic X-ray picture with marked thickening of the mucosal folds, puddling and segmentation of the barium. I

1. Internist, Sioux Valley Hospital.

Figures III & IV



These are a low and high power view of a normal small bowel biopsy. Note the tall villi, long crypts, and high columnar epithelium.

thought that the depressed endocrine studies and uric acid elevation was secondary to severe malnutrition. Of interest also was a marked decrease in libido and impotence accompanying the low FSH, 17 keto-steroids and small testes and prostate.

Subsequent to the biopsy the patient was treated with a gluten-free diet with folic acid supplements. His weight increased but his hemoglobin hovered around 11 gms%. I added vitamin B₁₂ and the hemoglobin rose to 15.0 gms%. His weight steadily increased. Six months after dietary therapy, he weighed 183 lbs. He also noted increased beard growth and increased libido. His appetite was ravenous and all his laboratory tests which were abnormal in the protocol returned to normal levels. His uric acid is still slightly elevated at 7.0 gms%. He has returned to school and continues to do very well. His weight has dropped to 172

Photographs by W. Halbritter, M.T. (ASCP)

Figures V & VI



These figures represent the small bowel biopsy in this case. The mucosa is flat and the villus pattern is completely lost. The columnar epithelium is flat and there is an increase in chronic inflammatory cells in the lamina propria.

lbs. but I attribute this to the fact that he is not following his diet quite as strictly as before. The diet is a difficult one to follow and not all patients require as strict regimentation as others. Therefore, I will follow him and see how he does with less strict diet.

One point I do want to bring out here is the importance of the prostatic size in following or diagnosing patients with hypopituitarism or hypogonadism. I have always felt that the finding was a very reliable one.

Dr. Barlow: Are there any other questions?

Dr. Richard Friess¹: When you do a small bowel biopsy is there any problem with not being able to withdraw the capsule after the biopsy?

Dr. Barlow: Occasionally there is. This presents no problem usually since you can cut the tubing and let the capsule pass spontaneously.

1. Intern, Sioux Valley Hospital.

FINAL DIAGNOSES

IDIOPATHIC STEATORRHEA (NONTROPICAL SPRUE)

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ANNUAL CONVENTION ANNOUNCEMENT

National Society for Crippled Children and Adults

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Los Angeles, California

November 17 and 18, 1967

For further information please contact:

National Society for Crippled Children and Adults

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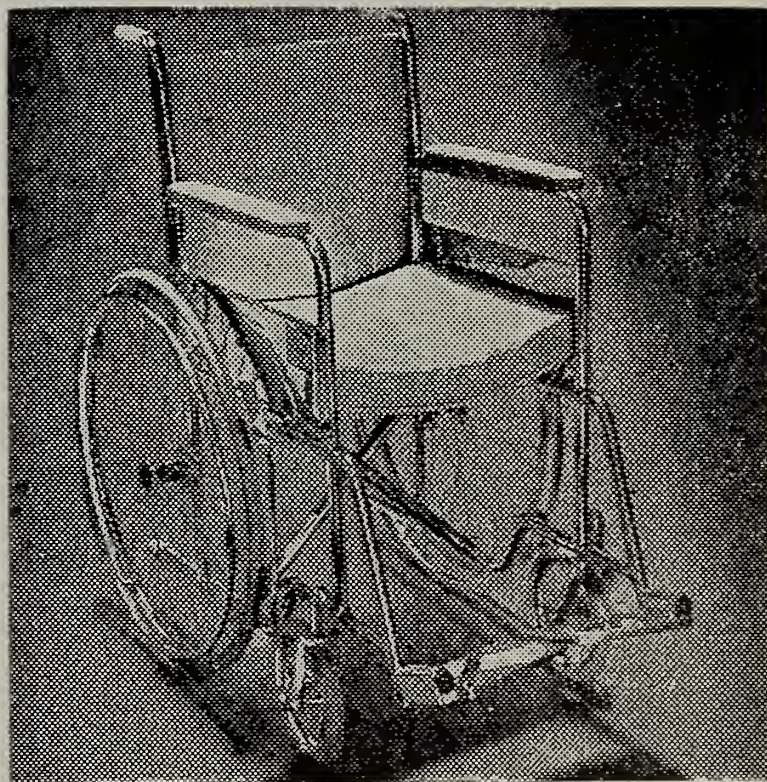
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Children's Hospital, Denver, will present the Aspen Conference on the Newborn at the Aspen Institute for Humanistic Studies on February 5, 6, and 7, 1968.

Morning seminars and discussions will be led by Jerold F. Lucey, M.D., Professor of Pediatrics, University of Vermont; Thomas K. Oliver, Jr., M.D., Professor of Pediatrics, University of Washington; and Edward J. Quilligan, M.D., Professor and Chairman, Department of Obstetrics, Yale University. Afternoons will be open.

Registration fee is \$40.00. Registration will be limited to insure an informal meeting.

For further information write: Aspen Conference on the Newborn, Children's Hospital, 19th Avenue at Downing, Denver, Colorado 80218.



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The number of physicians who can be accommodated is necessarily limited. For this reason identical programs will be offered two successive weeks. The program will be presented first on November 6, 7 and 8 and repeated on November 13, 14 and 15. Those wishing to attend should communicate with Mr. M. G. Brataas, Mayo Clinic, Rochester, Minnesota, indicating which session they would prefer to attend.



"I KNOW I SAID BRING A SPECIMEN BUT—"

COMMENTARY

From

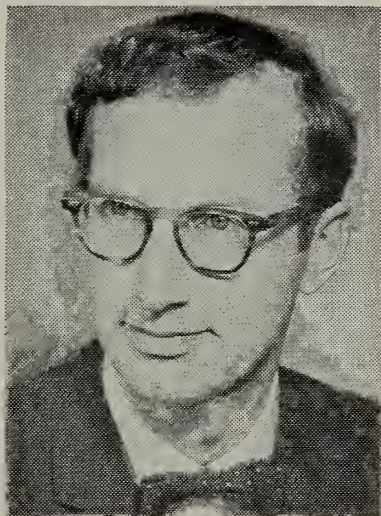


THE UNIVERSITY OF SOUTH DAKOTA SCHOOL OF MEDICINE

Edited by: Dr. Charles R. Gaush, Publications Committee

KNABE APPOINTED DEAN

President Edward Q. Moulton announced the appointment of Dr. George W. Knabe, Jr. as the 7th dean of the School of Medicine. He has been acting dean since August 1966 and Chairman of the Department of Pathology since 1960. In addition, he has been cancer coordinator, coordinator of postgraduate medical and paramedical education and liaison officer for international medical education for the AAMC. For the past three years he was chairman of the Commission on Scientific Medicine of the South Dakota State Medical Association.



After receiving his M.D. degree from the University of Maryland in 1949, Dr. Knabe interned at the Baltimore City Hospitals and received residency training at the Cleveland Clinic, in the U. S. Air Force and at Henry Ford Hospital. He has been on the faculties of the schools of medicine at Ohio State University and the University of Puerto Rico and between 1957 and 1959 was medical education advisor in Pathology to the University of El Salvador School of Medicine under an International Cooperation Administration program.

Dr. Knabe will continue as Chairman of Pathology until a new chairman can be appointed.

FACULTY COAUTHOR NEW BOOK

Two members of the faculty in Microbiology were coauthors of a book published this year by the World Publishing Company of Cleveland, Ohio. Dr. Paul F. Smith, Professor and Chairman of Microbiology, and Dr. Raymond J. Lynn, Associate Professor, each wrote a chapter in the 4-chapter volume entitled: "A Microbial Enigma

— Mycoplasma and Bacterial L-Forms." The 264-page volume is the first in a comprehensive series representing the "best thought" in modern microbiology. Each volume makes a major contribution to a specialized area of study and each represents the work of some of the most distinguished scientists active within these areas.

The recently published work presents discussions in four major areas of research: (1) Mycoplasma of Human Origin, (2) the Physiology of Mycoplasma (written by Dr. Smith), (3) the Biochemistry of Mycoplasma and L-Forms and (4) the Immunology of Mycoplasma and L-Forms (written by Dr. Lynn). The other authors were Dr. York E. Crawford of the Great Lakes Naval Training Center and Dr. Charles Panos of the Albert Einstein Medical Center and Temple University.

To further increase the value of the discussions, each contains descriptions of proven techniques that may be used as routine laboratory procedures.

DENTAL HYGIENE COURSE BEGINS

The first class in the Dental Hygiene Program began their studies in September under the direction of Miss Sharon Barton, B.S., RDH. The 12 students, all residents of South Dakota, will take the usual college core courses as well as Anatomy, Histology and various Dental Hygiene courses. The latter includes the fundamentals of dentistry and dental hygiene, oral and dental anatomy and histology, dental materials and laboratory and clinical practice. The Dental Hygiene courses will be taught by Miss Barton and Mrs. Nancy Daggett, registered dental hygienists, who were trained and taught previously at the University of Iowa. Dr. Darrell R. Ludeman, a practicing dentist from Tyn dall, will assist in program planning and teaching.

Three students in the new class are recent high school graduates and the others were already enrolled at USD as freshmen, sophomores and juniors. Applications for next year's class are now being accepted.

**COUNCIL MEETING
SOUTH DAKOTA STATE
MEDICAL ASSOCIATION**

11:00 a.m., Saturday
September 9, 1967

Guest House Motel
Watertown, S. D.

The meeting was called to order by E. T. Lietzke, M.D., Chairman of the Council. Present for roll call were Doctors John Stransky, Robert Quinn, A. P. Reding, Robert Hayes, Preston Brogdon, E. T. Lietzke, E. J. Perry, G. Robert Bartron, J. A. Muggly, A. J. Tieszen, Fred Leigh, Harvstone Lewis, Clark Johnson, C. E. Tesar, Marion R. Cosand, H. E. Lowe, and H. H. Brauer. Also present were Dr. James P. Steele and Commission Chairmen, Gerald E. Tracy, M.D. and B. J. Begley, M.D.

Dr. E. J. Perry moved to dispense with the reading of the minutes inasmuch as they have been published. The motion was seconded by Dr. Tesar and carried.

Dr. Lietzke introduced Dr. H. H. Brauer, the new Councilor from the Whetstone Valley District, and Dr. B. J. Begley, Chairman of the Commission on Internal Affairs, to the Council.

OLD BUSINESS

A discussion was held on the letter the State Medical Association received from Dr. Van Heuvelen concerning the Crippled Children's Program. Dr. Perry moved that the Council of the South Dakota State Medical Association accept the Crippled Children's fee schedule for now allowing \$4.00 per point on the South Dakota Relative Value Study, but that a letter be sent to the Department of Health urging them to allow usual and customary charges as soon as possible. The motion was seconded by Dr. Clark Johnson and carried.

Mr. Erickson discussed a letter from the JOURNAL-LANCET regarding its centennial issue and suggested that any physicians interested in submitting biographical sketches on well known physicians in South Dakota, either past or present, please do so.

Mr. Erickson gave a brief report on the building expansion and the added growth in employees for the South Dakota State Medical Association building.

A report on Title 19 was given by Mr. Erickson. He stated that the Federal Government has approved the South Dakota plan and that the program should start about October 1, 1967.

Dr. Robert Hayes discussed the Nebraska-South Dakota Regional Medical Program. Dr. Hayes moved that the South Dakota State Medical Association approve the consolidation of the Nebraska and South Dakota Regional Medical Program budget into a combined budget to be administered by the Nebraska State Medical Association. Dr. Fred Leigh seconded the motion and it was carried.

Mr. Erickson gave a brief report on the Comprehensive Health Planning program. Dr. Hayes and Dr. Tesar reported on their trip to Oklahoma to observe Oklahoma's Comprehensive Health Planning operation. (Report from Dr. Hayes follows).

August 31, 1967

FROM: Ad Hoc Committee for Comprehensive Health Planning

TO: Council, South Dakota State Medical Association

RE: Inspection of Oklahoma Comprehensive Health Planning

On August 16 and 17, 1967, Dr. Charles Tesar and Dr. Robert Hayes visited the Oklahoma Regional Medical Program and Oklahoma Comprehensive Health Planning groups in Oklahoma City.

The material we saw and the reports are voluminous. Therefore, instead of reproducing this we have

sent a copy to Mr. Erickson for the file if you desire to see it in detail.

By way of summary:

(1) Oklahoma started its program in Health Planning (not regional medical program or comprehensive health planning as provided by Federal law) some years ago. The former governor invited forty-one (41) prominent civic leaders of the state to form the nonprofit, charitable, educational Oklahoma Health Sciences Foundation. Its purpose was to provide an "umbrella group" of outstanding people to coordinate and guide planning, and development of the Oklahoma Health Center. This took root and grew. Then the Federal laws 89-239 and 89-749 were passed which only added to the picture. A powerful, visionary dean, Dr. James L. Dennis, was the master chemist and the catalysts seemed to be PL 89-239 and PL 89-749.

(2) Oklahoma had Dr. Tom Points, who directed the Oklahoma Health Intelligence Facility, and was able to receive funds for his project from RMP. He had long been interested in "Project Responsibility" so the new PL 89-239 gave him an opportunity to develop this more fully since he could get some funding from RMP (10%). This facility gathers all health data, stores it in a computer, retrieves it when desired.

(3) Project Responsibility is a project to bring the medical school to a community of 450 people about 25 miles from Enid, Oklahoma. The community here raised \$850,000 and Oklahoma University will staff the combination nursing home — emergency hospital with health personnel. [Not so easy as once believed]

(4) Oklahoma plans to have an Allied Health Sciences School. They are now working with colleges in the area to solve curriculum problems. [Not easy either] They feel that this is the approach to gain manpower needed for Oklahoma's health needs.

(5) The many projects listed would give anyone an idea that Oklahoma intends to "get on down the road." We were impressed by the Staff and the enthusiasm shown for cooperative-State controlled endeavor.

We, therefore, recommend to the Council and to the House of Delegates of the South Dakota State Medical Association:

- (1) Establish a Health Intelligence Facility — non profit — charitable — in
 - a. Yankton (Dr. Steele's group)?
 - b. Vermillion?
 - c. Sioux Falls?
- (2) Organize local committees in ten (10) regions of South Dakota (on the map) to serve as planning committees for RMP and Comprehensive Health Planning. All committees with a broad base of Health representation.
- (3) Urge Mr. Clel Elwood, South Dakota Planning Board Director, (or the governor) to appoint a physician for Comprehensive Health Planning Coordinator, at earliest moment. We suggest Dr. John Lowe (Mobridge).
- (4) Planning is already underway and all it lacks is the idea of being comprehensive. As we have understood it PL 89-749 does not have all of the terrors for physicians in it that we had believed heretofore. Therefore, we urge co-operation and leadership so that physicians in South Dakota will direct this program which could be of great benefit to our state.

Dr. John Stransky moved that the Council accept the recommendation urging Mr. Clel Elwood, South Dakota Planning Board Director, (or the Governor) to appoint a physician for Comprehensive Health Planning Coordinator at the earliest possible moment and that the name of Dr. John Lowe of Mobridge be suggested for this position. The motion was seconded by Dr. Clark Johnson and carried. Dr. Stransky moved that the Council refer the decision of estab-

lishing a location for the Health Intelligence Facility and the organizing of ten local, regional committees to the Commission on Liaison With Allied Organizations. The motion was seconded by Dr. Clark Johnson and carried.

The Council invited Dr. James Steele to present a brief discussion on recent activities of the South Dakota Health Research Institute. Following his comments there was a brief period for questions.

NEW BUSINESS

Mr. Erickson discussed the letter received from General Peatfield concerning the Military Medicare program. The Council determined that inasmuch as the contract is handled by Blue Shield it will not be necessary for the State Medical Association to take action.

Mr. Erickson discussed the letter received from Dr. Gregg regarding farm safety. (Report from Dr. Gregg follows)

July 20, 1967

TO: John Stransky, M.D., President, South Dakota State Medical Association.

FROM: John B. Gregg, M.D., Chairman, Committee for the Conservation of Hearing, South Dakota Academy of Ophthalmology and Otolaryngology, and Chairman, Commission on Medical Service, South Dakota State Medical Association.

SUBJECT: The "Governor's Luncheon" at the Westward Ho Country Club, Sioux Falls, South Dakota, July 20, 1967, to kick off Farm Safety Week.

ENCLOSURES:

- (1) Letters from Paul K. Turnquist, Ph.D.
- (2) Letter from William H. Peterson
- (3) Letter from William H. Peterson regarding Farm Safety Week
- (4) Newsletter, South Dakota Farm Safety Council regarding Farm Safety Week
- (5) Bibliographical sketch of Robert G. Rupp
- (6) Program for Governor's luncheon
- (7) Twenty-Fourth Annual National Farm Safety Week Planning Guide
- (8) Copy of Sioux Falls Argus-Leader, Sioux Empire Page for Tuesday, June 27, 1967
- (9) Copy of letter dated June 28, 1967 to Paul K. Turnquist from J. B. Gregg, M.D.
- (10) List of 1967 membership, South Dakota Farm Safety Council (2 copies)
- (11) Summary of activities, 1966, South Dakota Farm Safety Council (2 copies)
- (12) News release entitled "Farm Safety Week Proclaimed For South Dakota" for release to newspapers (2 copies)
- (13) Farm Safety Shorts news release for radio and TV (2 copies)
- (14) Farm Work Acts Summary, 1966, Newspaper clipping survey by William H. Peterson (2 copies)
- (15) Fatal accidents of Iowa farm people, 1947 through 1964 (2 copies)
- (16) Slow moving vehicles emblem information material (2 copies)

Because of the work of the Committee for the Conservation of Hearing of the South Dakota Academy of Ophthalmology and Otolaryngology, I was invited by Dr. William H. Peterson, Extension Agricultural Engineer at the South Dakota State University, to attend the Governor's Luncheon which was to introduce the 1967 Farm Safety Week. This matter was

discussed with Mr. Richard Erickson, Executive Secretary of the South Dakota State Medical Association and it was his suggestion that I also represent the South Dakota State Medical Association in my capacity of forthgoing Chairman of the Commission on Medical Service of which the Rural Health Committee is a function. I also represented the Speech and Hearing Clinic of the University of South Dakota because This Organization has been vitally interested in Hearing Testing in the State of South Dakota and the subject of noise injury caused by farm machinery. The purpose of the meeting was to assemble individuals representing various organizations which are concerned with the subject of safety on farms and to bring to the attention of the Press of South Dakota the fact that Farm Safety week has been proclaimed by President Johnson as the interval between July 23rd through 29th, 1967. Unfortunately Governor Nils Boe was unable to attend the meeting.

The highlights of the meeting were a paper by Mr. Charles Rupp, Chairman, Farm Safety Division, Minnesota Safety Council, and a paper by William H. Peterson, Extension Agricultural Engineer, South Dakota State University. Both speakers gave excellent discussions relating to the subject of Farm Safety. Mr. Rupp showed a very interesting movie made by the John Deere Tractor Company illustrating the mechanism of injury in the farm tractor accidents. The following are points which were left with me after hearing these discussions:

- (1) The majority of farm tractor accidents are preventable.
- (2) Much education in regard to the use of farm equipment is necessary.
- (3) Many of the individuals involved in farm accidents have been exposed to adequate educational campaigns by various farm organizations prior to the time they have accidents but either "forget" or neglect to follow the safety measures which they know to be proper. The situation would appear to be very similar to that encountered by physicians in regard to such things as smoking and cancer.
- (4) Much more information is needed by the Farm Safety Council in regard to the incidents of farm accidents so that more aggressive campaigns can be put on to promote farm safety. Unfortunately the only mechanism through which this organization can gain information relating to the farm accidents with any degree of accuracy is through newspaper clippings. The physicians of the State of South Dakota and surrounding states could be of tremendous value if some program could be instituted whereby farm accidents, regardless of how minor, could be made reportable either on a voluntary or a compulsory basis.
- (5) The South Dakota State Medical Association has a vital interest in the matters which are being discussed by the Farm Safety Council and both the Council and the State Medical Association can do much to complement each other in the field of Farm Safety.

I hereby recommend the following to the South Dakota State Medical Association:

- (1) The Chairman of the Commission on Medical Service of which Rural Health is a function should become vitally interested in the work being done by the Farm Safety Council and should make contact with Dr. William H. Peterson, Extension Agricultural Engineer at the South Dakota State University soon. A program should be worked out whereby the Medical Association and the Farm Safety Council can assist one another.
- (2) The Commission on Medical Service of the South Dakota State Medical Association should take under advisement the subject of the reporting of all farm accidents over an interval

of time so that much needed information can be supplied to the Council on Farm Safety. In this field the physicians of South Dakota can then be of tremendous assistance to this organization in their campaign to promote farm safety.

- (3) It is recommended that the South Dakota State Medical Association through its Rural Health Committee become an active member of the Farm Safety Council. Dues of this society are \$1.00 per year and the membership on the Council can be arranged through Professor William H. Peterson.

Respectfully submitted,
John B. Gregg, M.D.

Dr. John Stransky moved that the Council refer the report to the Commission on Medical Service along with recommendations from the AMA Council on Rural Health. The motion was seconded by Dr. A. P. Reding and carried.

Mr. Erickson presented a letter from the Black Hills District Medical Society requesting honorary membership for I. R. Salladay, M.D. Dr. Fred Leigh moved that Dr. I. R. Salladay be extended honorary membership in the South Dakota State Medical Association. The motion was seconded by Dr. Hayes and carried.

Nominations were opened for the replacement of Dr. J. A. Anderson on the Board of Directors of the Medical School Endowment Association. Dr. Clark Johnson moved that Dr. Ted Wrage be unanimously elected to complete this term. The motion was seconded by Dr. Lowe and carried.

Mr. Erickson reported on the letter written by D. H. Berry, D.O. requesting that osteopaths be allowed to attend the scientific portion of the South Dakota State Medical Association's annual meetings. Dr. Bartron moved that the letter from D. H. Berry, D.O. be taken under advisement and be referred to the Commission on Liaison With Allied Organizations for study and that a report be presented to the House of Delegates at the next annual meeting. The motion was seconded by Dr. Cosand and carried.

A brief discussion was held on the letter received from Mr. L. J. Phillips requesting a donation from the State Medical Association for the International Summer School of Alcohol Studies. Dr. Perry moved that the Council reject Mr. Phillips' request for funds for the International Summer School of Alcohol Studies. The motion was seconded by Dr. Reding and carried.

Dr. Stransky reported on the re-evaluation of commission functions. He suggested that the Ad Hoc committee on Title 19 and Comprehensive Health Planning submit their minutes to the Commission Chairmen on Medical Service and Legislation and Governmental Relations so there will be no overlapping.

REPORT OF THE COMMISSION CHAIRMEN

No report for the Commission on Medical Service.

The Commission on Scientific Medicine reported that they are making arrangements for the annual meeting in May, 1968.

The Commission on Communication gave a brief report on their booth at the State Fair and Community Health Week which is to be held in October, 1967.

No report for the Commission on Liaison With Allied Organizations.

Dr. Begley, Chairman of the Commission on Internal Affairs, had no report.

Dr. Bartron, Chairman of the Commission on Legislation and Governmental Relations, discussed the Basic Science Board examinations. Dr. Stransky moved that Mr. John Zimmer, Attorney for the State Basic Science Board, be asked to attend the next Council meeting to discuss the present Basic Science Law. The motion was seconded by Dr. Lowe and carried.

Mr. Erickson briefly outlined the district meeting schedule and suggested that each district regardless of size meet at least three times a year.

Dr. Stransky, as President of the Association, requested a breakdown of the clinic groups in each district. He requested that each Councilor send this information to the Executive Office.

Mr. Erickson discussed the possibility of the Blue Shield Complementary 65 coverage reducing its deductible from \$100.00 to \$50.00. Dr. Brogdon moved that the Council suggest that the Blue Shield Complementary 65 deductible be reduced from \$100.00 to \$50.00. The motion was seconded by Dr. Brauer and carried.

It was decided that the next Council meeting be held at 11:00 a.m. on Saturday, December 9, in Sioux Falls, South Dakota.

The meeting was adjourned at 3:30 p.m.

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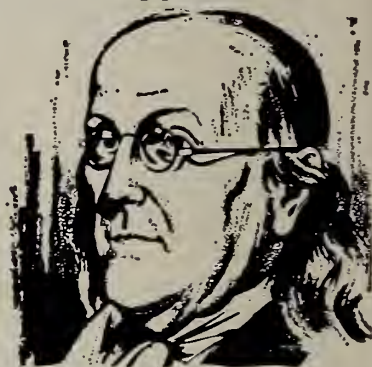
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FARM SAFETY

In an agricultural economy such as exists in South Dakota, the well being of the farmer, his family and employees, must be of concern to all. Farm safety and accident prevention is of vital concern to the S.D.S.M.A. and each of its members. The subject of Rural Health is an important function of the Commission on Medical Service of the State Medical Association. Yet in the past there has never been a concerted effort by the S.D.S.M.A. or any of its committees to start a farm safety education and accident prevention program.

Such a program has been originated by other groups, one of the prime movers being the S. D. FARM SAFETY COUNCIL. Professor William H. Peterson, Extension Agricultural Engineer at the South Dakota State University at Brookings, and Secretary-Treasurer of this organization, has been extremely influential in the development of this farm safety council.

Farm Safety Week (July 23-29, 1967) was designated by President Johnson, and introduced to the Press of this state at the GOVERNOR'S LUNCHEON which was held in Sioux Falls on July 20th. The two main speakers at this luncheon were Robert G. Rupp, Managing Editor of *THE FARMER*, and Professor Peterson. They both brought out the fact that fatal and disabling farm accidents are very common and increasing in number in this state, each year. The largest single killer of farmers is the

tractor upset. The majority of these fatalities could be prevented by tractor safety frames and seat belts. The majority of other farm and ranch accidents are preventable. THE FARM SAFETY COUNCIL is very concerned about this fact and the apparent inability to educate farmers in methods of safety and to make them use this education. One of the big problems facing the FARM SAFETY COUNCIL is the fact that there is no way of determining the true incidence of farm accidents and their actual mechanism. For lack of other sources, data relating to farm accidents has to be obtained from newspaper clippings, a most inefficient method of information recovery. It is in the realm of information supply relating to agricultural accidents that the S.D.S.M.A. and its members could be of great assistance to the FARM SAFETY COUNCIL in the development of the program of farm safety. Representatives of the S.D.S.M.A. should attend all meetings of this organization in the future and participate actively in all their programs. It would be a great step forward in FARM SAFETY if a system can be inaugurated whereby a brief report of **all** farm accidents, including a short resume of the circumstances of occurrence, can be made available to the FARM SAFETY COUNCIL so that better educational programs for the rural communities can be developed.

J. B. Gregg, M.D.

ZIP DIAGNOSIS

To facilitate diagnosis and to adequately mystify and confuse our patients I suggest and urge the adoption of a system for saving time and effort by physicians and surgeons.

First we shall divide the body into its natural halves, right and left. We designate right as #1 and left as #2. The patient will then start his self "zip" diagnosis by a 1 or a 2.

The second portion of our diagnostic zip shall denote the body part as follows: 1 shall designate the head; 2 denotes the arms; 3, legs; 4, chest; 5 the abdominal parts and 6 the back and buttocks.

The third portion will designate the type of illness. 1 shall represent an ache; 2, a sharp pain; 3, a vague malaise; 4, a weakness and 5, a complete paralysis.

The fourth digit of our zip diagnosis shall designate 1, fever; 2, no fever and 3, chills.

The final digit will represent the patient's financial status: 1 will designate wealthy; 2, modest circumstances; 3, adequate insurance; 4, moderate insurance coverage and 5, a pauper.

To all of this the patient may add one very brief comment, mostly usable to confuse the issue.

Thus a patient on entering a doctor's office will be expected to give his name and address, including of course, his postal zip code and then add his diagnostic zip. An example is shown here. The patient zips himself as follows:

15213 — no appetite especially fats

The doctor will have absolutely no trouble in immediately recognizing this as a chronic cholecystitis with cholelithiasis and a mere glance at the zip diagnostic number, with the use of a machine such as the postal department uses to read zip code numbers, will get that patient onto the operating table in no time at all and out will come his gall bladder, part of his stomach and all of his appendix — all in jig time.

This is surely as simple and as efficient as postal zip code and should receive federal approval stat.

L. J. Pankow, M.D.

ORAL CANCER

A new American Cancer Society film expressly for physicians and medical students. It presents a visual and digital oral examination to be given as a part of a routine physical checkup for asymptomatic patients. To arrange screening of this 22 minute film, call your local ACS.

Letter to the Editor—

301 West 29th Street
Sioux Falls, South Dakota
August 28, 1967

Mr. Richard C. Erickson
Executive Secretary
South Dakota State Medical Association
Dear Mr. Erickson:

I would like to express my sincere appreciation for your generous scholarship award. This gift will greatly ease the burden of pursuing a medical education. I hope that my academic achievements this coming year will reach your expectations.

Sincerely,
Michael H. Scarmon

CANCER IN CHILDREN

A newly released American Cancer Society film for physicians and medical students, describes the significant features of Wilms's tumor, neuroblastoma, intracranial neoplasms, leukemia and rhabdomyosarcoma. Screening of this 27 minute film may be arranged through your local ACS office.



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THE ROUTINE THROAT CULTURE

The bacteriological evaluation of the flora of the throat and adjacent areas can be of significant importance in establishing the etiological diagnosis of upper respiratory infections. Because of the higher incidence of serious disease and the two major sequelae of group A streptococcal infections (nephritis and rheumatic disease), throat cultures are of marked significance in children. In the mature or aged patient, the importance of this procedure is lessened. Possibly, the major contribution here lies in indicating the therapeutic course to be followed in more chronic infections.

Normal flora: A minor problem in evaluation of the results of throat cultures is the finding of various types of bacteria from the throat that constitute the normal flora. Alpha hemolytic streptococci and non-pathogenic *Neisseria* species, diphtheroids, and micrococci are normal residents of the throat and are known to increase in times of upper respiratory infection without being directly associated with the infection. Lactobacilli, coliform bacilli, and yeasts are also encountered. For this reason, the isolation of these organisms from throat culture in normal or moderately increased numbers is of limited significance.

The more frequently encountered pathogenic organisms are the Group A hemolytic streptococci, the pneumococcus, members of the *Haemophilus* group (notably, *H. influenzae*), *Candida albicans*, and the organisms associated with Vincent's angina. Infrequently, Group A streptococci will be isolated from the normal throat of a carrier. *Neisseria meningitidis* also may be found in the normal throat, although the carrier rate for this organism is very low.

Group A hemolytic streptococci: *Streptococcus pyogenes* is an overt pathogen causing such diseases as septic sore throat, pharyngitis, laryngitis, tonsillitis, and scarlet fever. It is well known that the recognition and treatment of infections caused by these organisms is essential to the prevention of their more serious sequelae. Unfortunately, streptococcal throat

infections cannot be diagnosed on clinical signs with any great degree of accuracy. While possibly 90% of streptococcal infections are caused by the Group A streptococci, many infections of the upper respiratory system caused by other organisms are clinically similar.

Diplococcus pneumoniae is frequently found in the throat, and carrier rates in normal adults for *D. pneumoniae* may range as high as 50%. In children, the organism, in the presence of inflammatory conditions, should be considered pathogenic. In addition to causing pneumococcal pneumonia, this organism frequently causes infections of the sinus, middle ear, pharynx, and meninges.

Haemophilus influenzae is considered pathogenic for young children. Pharyngitis or middle ear involvement may progress to a severe and frequently fatal obstructive respiratory syndrome or to meningitis. In the adult, the organism is much less invasive although chronic sinus, middle ear, and mastoid infections are not uncommon. A closely related bacillus, *Bordetella pertussis*, is the causative agent of whooping cough and may be isolated from either throat culture or cough plate.

Staphylococcus aureus less frequently infects the tonsils and sinuses of both children and adults, and is associated with a purulent discharge. Coagulase-positive *Staphylococcus aureus* is often found in the nasal passages in the absence of infection. In adults, carrier rates of 20% to 40% are not uncommon.

Diphtheroids: While not pathogenic, diphtheroid bacilli from the throat are significant in that, when found, they must always be differentiated from the diphtheria bacillus, *Corynebacterium diphtheriae*. Diphtheria in this country is a rare disease, although the visualization of large numbers of diphtheroids on a smear from the throat necessitates ruling out the toxigenic diphtheria bacillus.

Candida albicans: This organism is frequently found in the normal mouth and throat where it constitutes part of the normal flora of many persons. It becomes significant only when found in extremely large numbers in the presence of some oro-pharyngeal pathology. When this state exists, the organisms are present in extremely large numbers and can be seen on the surface of the membranes of the mouth, tonsils, pharynx, etc. as whitish mats which can be scraped off with difficulty.

Neisseria species: *Neisseria meningitidis*, the meningococcus, is a serious pathogen. Although it may be present in a carrier state, finding this

organism in throat culture should always be considered significant enough to warrant its eradication. Septicemia and meningitis can occur in adults as well as children following infection of the nasopharynx.

While the two more commonly known *Neisseria* species, *N. catarrhalis* and *N. sicca*, have been known to cause upper respiratory involvement, infections of this type are extremely rare. The organisms are recognized as constituents of the normal flora. Occasionally, they have been implicated as sensitizing agents in allergic conditions (allergic rhinitis).

The organisms of Vincent's angina: The causal organisms of this disease are not routinely cultured from the throat. The disease is caused by a group of organisms and is readily diagnosed by examining smears microscopically from infected areas. When infection exists, great numbers of these organisms are found in the presence of pus cells. If clinical signs of the disease are also present, the diagnosis is confirmed.

Direct smear results frequently may be more contributory than results from cultures. This is particularly true when the more fastidious organisms are seen on the direct smear but show delayed growth or fail to grow on culture. Also, the smear will reveal the presence, or absence of pus cells that strongly indicate bacterial, rather than viral involvement. Another benefit of the direct smear is that it indicates the significance of the organisms isolated from culture, their relative numbers, and whether an adequate specimen was obtained. Frequently, more extensive and refined staining procedures using fluorescein-tagged antibody and the ultraviolet microscope may reveal the presence of group A streptococci on the same day the specimen was taken rather than delaying the findings until the organisms are identified from culture.

Many other pathogenic organisms may be isolated from a throat culture. Those presented above are more frequently encountered. Although adults are more resistant, or tolerant, to diseases caused by some of these organisms, children appear to be much more susceptible. Culture and direct smear results should always be interpreted in this light.

The specimen: To afford the physician the greatest amount of information, adequate material must be taken by sterile swab from involved areas of the upper respiratory passages. Since material is needed for stain and culture, a minimum of two swabs is essential.

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The content of the intensive 2-day course was determined after consultation with experts on stroke. The organization of material and manner of presentation are based on established principles of learning theory. In addition to actual patient demonstrations, teaching techniques used include videotapes, films, and taped recordings.

In order to allow every participant to take an active part, enrollment is of necessity limited to 20 physicians for each offering. The next offering is Friday and Saturday, January 19-20, 1968. Applications will be accepted in the order received. Tuition is \$50.00. To receive information or make application, write:

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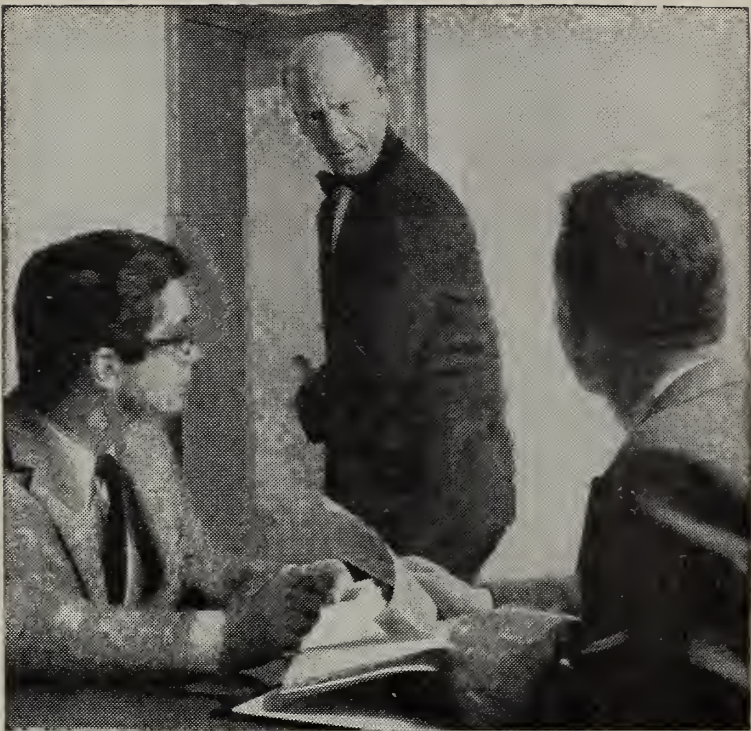


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A study began recently in the offices of 21 South Dakota physicians to attempt to find out reliably how doctors get and use information from patients in the diagnosis and treatment of their problems. The information seeking and using patterns of doctors have been presumed but never defined and analyzed, explained Dr. James P. Steele of Yankton, director of the study.

The project will be carried out by the South Dakota Health Research Institute and the University of South Dakota School of Medicine. Ten sophomore medical students from the University will observe and interview the participating physicians during a 90 day period following their second year. In Washington, United States Senators Karl Mundt and George McGovern announced jointly that a contract for \$42,700 has been approved by the Public Health Service Bureau of Health Services, to support the study.

The South Dakota Health Research Institute is a non-profit organization created by the South Dakota Medical Association and the South Dakota Hospital Association to carry out research activities in the health field. Its operating base is in Yankton.

Dr. Steele, a past president of the medical society, is president of the SDHRI. Other medical society directors are Myron C. Tank, M.D. of Brookings and Fred D. Leigh, M.D. of Huron. Hospital Association directors are Harry J. Christianson of Watertown, Lyle E. Schroeder of Sioux Falls and Sister M. Rosaria Kranz of Yankton. Eugene H. Sterns of Pierre, a petroleum executive, is a public relations director.

The study was designed and is being supervised by SDHRI with the aid of outside consultants as well as survey experts from the Systems Development Corporation of Santa Monica, California, Dr. Steele said. Drs. R. F. Thompson and C. F. Johnson of Yankton, faculty members, will serve as consultants from the medical school.

One reason for making the study is to gain a clear pattern of the way doctors in private practice use information now obtainable and to find out what other types of information they would use if more were available, Dr. Steele said. The SDHRI is also seeking other funds to support the creation of a centralized, computer-based health information system for the state. The information drawn from the preliminary study would be necessary for computer planning, he said.

During the course of his 90 day stay with practicing physicians, each medical student will observe and participate in patient visits. Immediately after each patient visit in which the doctor needs to collect information before making his diagnosis, the student will interview the doctor on his reasons for seeking specific information from the patient or from diagnostic tests. He will also ask the doctor what other type of information would have been useful if readily available during the examination.

The medical students will note how the doctors use patient data collected by their office aides, how they ask the patient about his major complaint, how much they ask about family histories of disease, what is sought about previous treatments. They will observe what kinds of physical examinations the doctors make of their patients. They will record the doctors' use of laboratory or x-ray studies made previously or ordered during the patient visits.

During the interviews following the visits, they will determine why each doctor sought the specific information he used and what else he would have found useful. Each doctor is expected to see some 100 to 150 patients needing workups during the period with the study yielding data on 2,000 to 3,000 cases in all.

Doctors participating in the initial field tests of the study are Dr. J. A. Muggly of Madison, Dr. Robert Foley of Tyndall, Dr. Ed A. Johnson of Milbank, Dr. Harold E. Lowe of Mobridge, Dr. Ted Hohm of Huron, Dr. David Studenberg of Gregory, Dr. Jack T. Berry and Dr. Richard Gere of Mitchell, Dr. Denny Ortmeier of Sioux Falls, Dr. Melvin Marousek of Belle Fourche, Dr. John C. Rodine of Aberdeen, and Dr. Roscoe Dean.

Doctors participating in the second phase of the field tests are Dr. F. R. Williams of Rapid City, Dr. C. F. Roberts, Jr. of Brookings, Dr. G. E. Tracy of Watertown, Dr. R. F. Thompson of Yankton, Dr. Marion Cosand of Winner, Dr. Harold E. Lowe of Mobridge, Dr. James Tieszen of Pierre, Dr. Fred Leigh of Huron, and Dr. Karl Wegner, Dr. Warren Jones, and Dr. Courtney Anderson of Sioux Falls.

The University of South Dakota Medical Students participating in the tests are L. F. Wilkes of Vermillion, Morgan Smith of Yankton, Robert Bleck of Watertown, Robert Myers of Macomb, Illinois, Jerry Bratberg of Irene, Hollis Aharin of Rapid City, Ray Townsend of Bozeman, Montana, James Reynolds of Sioux Falls, William Lobe of Sioux Falls, and David Maas of Minneapolis.

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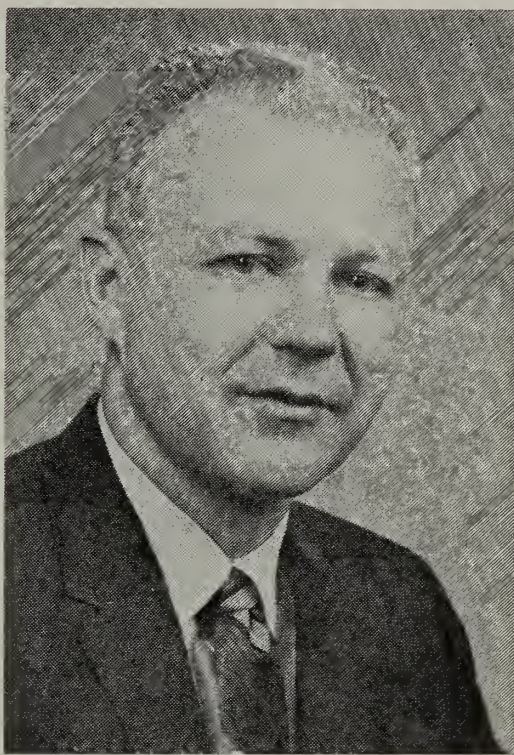
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Greetings:

This past month I had the opportunity to attend the annual AMA Communications Institute. The Institute dealt with communications in the medical profession as well as with various facets of public relations.

In the past, much emphasis has been placed on projecting the proper image of AMA and organized medicine. We all recognize the importance of this. However, the thought persists that this objective is most effectively accomplished through the individual physician rather than by the employment of Public Relations Consultants.

Are we treating our patients as individuals, not as numbers? Are we practicing the art of medicine along with the science? As highly educated individuals are we taking as active a part as we should in community affairs? I think we can all see room for improvement in these areas. We will be better for it — and incidentally, so will our image.

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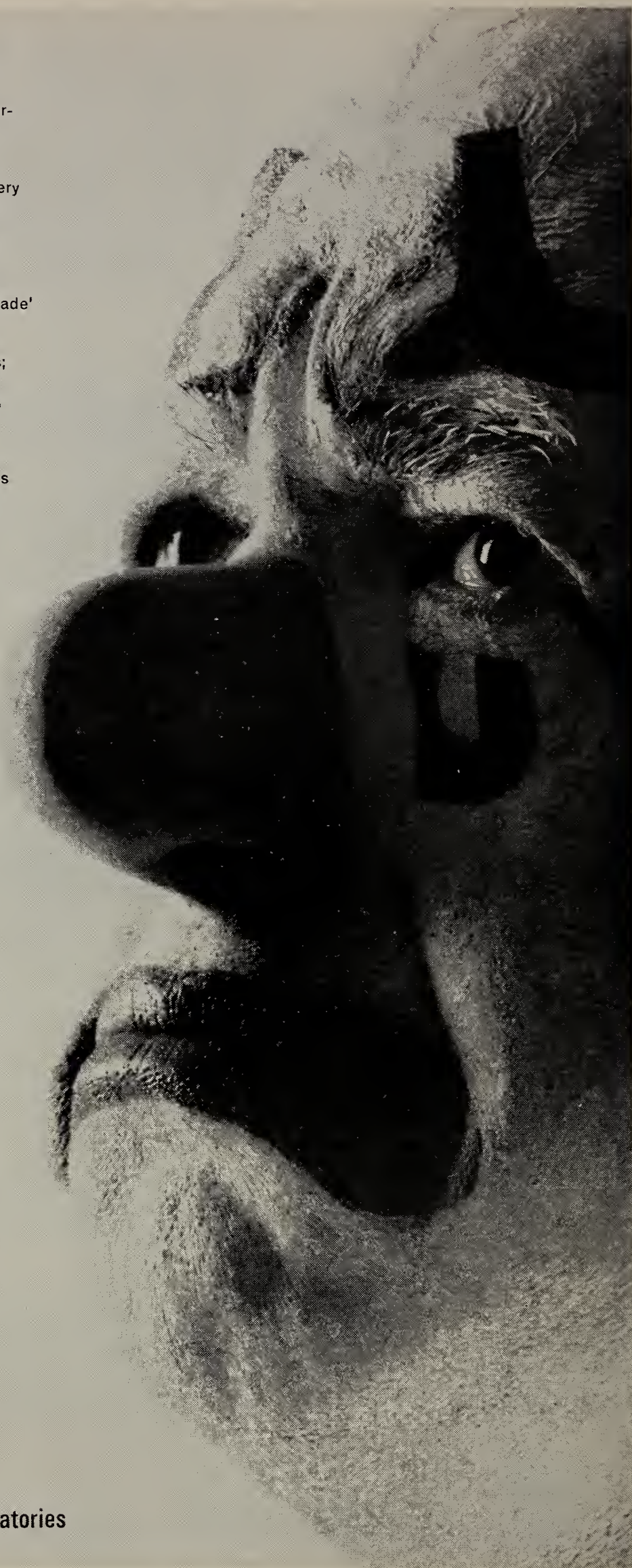
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Pop's Proverb

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Be satisfied while in a
cloud
Of human doubts and
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not allowed?

H. R. Lewis, M.D., of Mitchell, and **H. L. Saylor, Jr., M.D.**, of Huron, spoke on a panel at the 25th Annual South Dakota Coaching Clinic held in Huron.

* * *

John Elston, M.D., of Rapid City, recently addressed his local Kiwanis regarding progress in Cancer Research.

* * *

V. K. Cutshall, M.D., President of the Medical Staff of Sioux Valley Hospital, recently greeted the graduating class of nurses from Sioux Valley Hospital. Following Dr. Cutshall's greeting, **Dr. Robert H. Hayes**, Vermillion, Coordinator of the South Dakota Heart-Cancer-Stroke Program, gave the Commencement Address.

Twenty-five physicians and wives of the Third District Medical Society met on Aug. 10 at the Brookings Country Club to hear **Dr. Russell Orr** of Sioux Falls speak on "New Uses of Hormones." State President, **John J. Stransky, M.D.**, made his official visitation to the district during their meeting and discussed current programs of the State Medical Association.

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John Calene, M.D., of Aberdeen, was recently appointed to the Board of Trustees at St. Luke's Hospital. Dr. Calene has been in practice in Aberdeen since 1925 and is a Past President of the South Dakota State Medical Association. He is presently Governor of the American College of Cardiology for South Dakota.

* * *

G. Robert Bartron, M.D., of Watertown, has been appointed to his second term on the U. S. Chamber of Commerce Community Development Advisory Panel.

* * *

James Edward Ryan, M.D., of the Spiry Clinic, Mobridge, has been elected to active membership in the American Academy of General Practice.

* * *

A Codington County "Bartron for Governor" club has been organized to encourage **State Senator Robert Bartron, M.D.**, to seek the nomination for Governor in 1968. **Dr. H. Russell Brown** was elected Vice-Chairman of the organization at a meeting attended by nearly 150 persons.

Richard Erickson, Executive Secretary of the South Dakota State Medical Association, has been named Chairman of the Membership Committee of the American Association of Medical Society Executives.

* * *

Dr. Thomas McCarthy, Aberdeen, son of **Dr. and Mrs. Paul McCarthy**, has received his orders for medical service in the U. S. Army. His tour of duty will take him to Vietnam.

* * *

Members of the Lake Norden Association held a special "**Dr. Auskaps** Appreciation Day" on August 20.

Dr. Auskaps recently closed his Lake Norden office and has become associated with Bartron Clinic, on a full time basis, in Watertown.

* * *

Ground-breaking service was held Sunday, July 30, at Irene, for the new church edifice of the Calvary Lutheran Church. The site was donated by **Dr. Wallace Arneson** of Sioux Falls.

Dr. E. W. Urbanyi, Gettysburg, has announced that he will be leaving Gettysburg, S. D., and has accepted a position on the staff of the Veterans Administration hospital at St. Cloud, Minnesota, beginning September 15.

* * *

Dr. Milford O. Rouse, President of the American Medical Association, spoke at the National Extension Homemakers Council, meeting in Brookings in August. The 3rd District Medical Society feted **Dr. Rouse** with a dinner party during his stay.

* * *

Dr. E. H. Heinrichs, Watertown, recently returned from Estes Park, Colo., where he participated in the annual post-graduate course in pediatrics of the University of Colorado School of Medicine, Denver.

* * *

The Friends of the Middle Border Museum near Dakota Wesleyan University in Mitchell have on display the original office equipment of **Dr. C. V. Auld**, Plankinton. **Dr.**

Auld practiced in Plankinton from 1911 to 1966, at which time he retired. He is the father of **Dr. Merritt Auld** and **Dr. Marion Auld** of Yankton.

* * *

Dr. John W. Argabrite, Watertown, has resigned from the staff of the Brown Clinic and plans to construct a new clinic and pharmacy for a medical practice limited to asthma, allergic emphysema, hay fever and other allergic conditions.

* * *

Dr. Robert H. Hayes, Vermillion, Director of the Regional medical program for South Dakota, recently received the Superior Service Award from the U. S. Public Health Service. The presentation was made in Washington, D. C.

* * *

Christopher J. Moller, M.D., Dell Rapids, has volunteered for service in Viet Nam. **Dr. Moller** is departing September 8, and his term of service will run through November 9, 1967.

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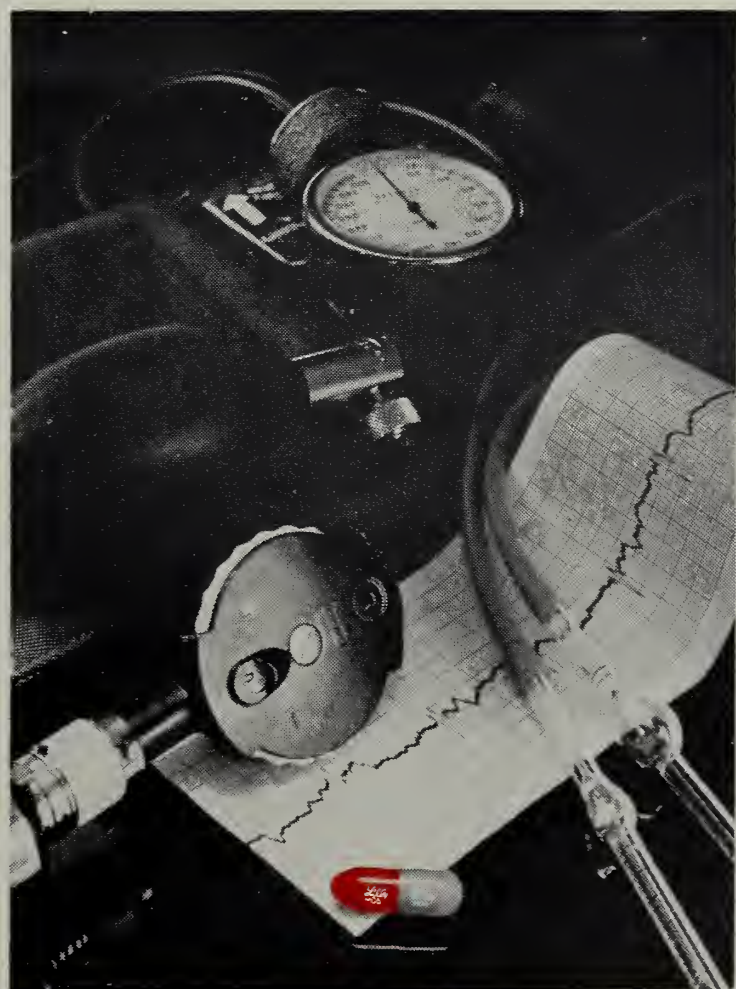
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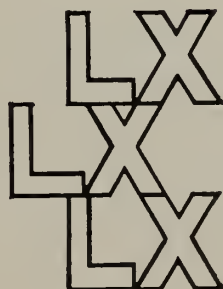
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JOURNAL OF THE SOUTH DAKOTA STATE MEDICAL ASSOCIATION
AND THE SIOUX VALLEY MEDICAL ASSOCIATION

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Scientific

PAPER

INTRAUTERINE FETAL TRANSFUSIONS

M. G. Mutch, Jr., M.D.* — Barry T. Pitt-Hart, M. B. Ch.B.** —
B. J. Williams, M.D.

In 1963, Liley suggested treatment of severe cases of erythroblastosis fetalis by intrauterine fetal transfusion.¹ Since then, this new modality of treatment has gradually come into widespread use.^{2, 3, 4} Because of the rarity of severely affected erythroblastotic fetuses, statistics have been slow in accumulating. Ross Laboratory, in its 53rd Ross Conference on Pediatric Research in October, 1966,³ gathered 230 cases of intrauterine transfusion from the literature. The largest single series published to date is by Friesen et al² who reported on 100 consecutive operations. There are a variety of techniques which have been used.^{2, 3, 4, 5} The purpose of this paper is to add six cases to the literature, and to suggest a somewhat different technique than has been previously reported.

The original purpose of intrauterine transfusion was to extend the intrauterine life of the severely affected infants until a stage of extrauterine viability was reached. Since the procedure itself is not without hazard, primarily to the fetus, the selection of candidates is of paramount importance. In selecting candidates for transfusion in this series, the past obstetric history was taken into account, but the single most important factor was the result of the amniocentesis performed between 25 and 34 weeks.

When possible, the results of consecutive amniocenteses 2 weeks apart were considered. If the optical density difference was in Liley's Zone III before 31 weeks, the patient was made ready for one or more intrauterine transfusions. These were to be spaced 2 weeks apart until a stage of extrauterine survival was attained.

TECHNIQUE:

The patients were seen in the office as in routine obstetrical care with the exception that more frequent visits were often necessary. Amniocenteses were performed as an office procedure as described in a previous article.⁶ The patients were admitted to the hospital the evening prior to the proposed transfusion. Routine laboratory work was obtained, including the cross-matching of a fresh unit of packed cells for the intrauterine transfusion. The maternal abdomen was prepped with Phisohex for 10 minutes the evening of admission. The patients were given routine sedation for sleep. On the morning of the procedure, the patients received morphine sulphate 12 milligrams, and pentobarbital 100 milligrams, between 45 and 60 minutes prior to the transfusion. The intrauterine transfusions were done in the Radiology Department using sterile technique. On arrival in the Radiology Department, the mother was given 100 milligrams of Secobarbital slowly intravenously, and allowed to lie supine on the x-ray table for 15-30 minutes. The infant usually became quiet during this time because of the sedation, and remained so for

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the duration of the procedure. Fetal size was determined by palpation, and position was then determined by both palpation and a flat plate of the abdomen. The maternal abdomen was scrubbed for 10 minutes with Phisohex, prepped with aqueous Zepherin, and draped with a spinal drape. After reviewing the initial film, occasionally a lateral film was taken to confirm the fetal position. An area was selected for insertion of the needle and skin was infiltrated with 1% Carbocaine to the peritoneum. A small incision was made with a #11 Bard-Parker blade. A #17 Toohey needle was inserted into the amniotic sac, the fetal buttocks being stabilized by the operator, and the vertex being immobilized by the assistant. At this point, fluid was usually withdrawn for study purposes, though this is not necessary for the procedure. The needle was then aimed at an area between the umbilicus, anterior iliac crest and symphysis pubis of the fetus. When the needle was felt to be within the peritoneal space, 2 to 3 c.c. of Conray contrast media was injected to confirm this position under image intensifying fluoroscopy. There is a characteristic give when the needle enters the peritoneum similar to that felt when doing a spinal tap. Correct location of the needle was verified by a typical dispersion pattern of the dye, usually outlining the intestines. A second flat plate of the abdomen was taken to confirm the fluoroscopic impression and the transfusion begun. The packed cells were previously typed and then cross-matched against the mother's serum and stored in plastic bags. The cells in the later cases were passed through a Hemokinetitherm blood warmer which heated blood to a temperature of 92-97 degrees F. in 5 minutes. The blood was injected in 12 c.c. increments directly into the fetal peritoneal cavity. Injection time averaged about 30 minutes. Fetal heart tones were checked frequently, and if there was a marked alteration in rate or rhythm, the procedure was stopped until a steady state was reached. The amounts of injected packed cells were determined empirically and averaged 60-80 c.c. under 30 weeks gestation, 100-110 c.c. between 30-32 weeks of gestation, and 110-120 c.c. over 32 weeks gestation. Besides gestational weeks, the other factors which had a strong influence on the final volume of r.b.c.'s injected were the amount of back pressure on the needle, persistent change in fetal heart tones, and estimated fetal size.

COMPLICATIONS:

Fifteen transfusions were administered to 6 fetuses. There were 7 complications five of

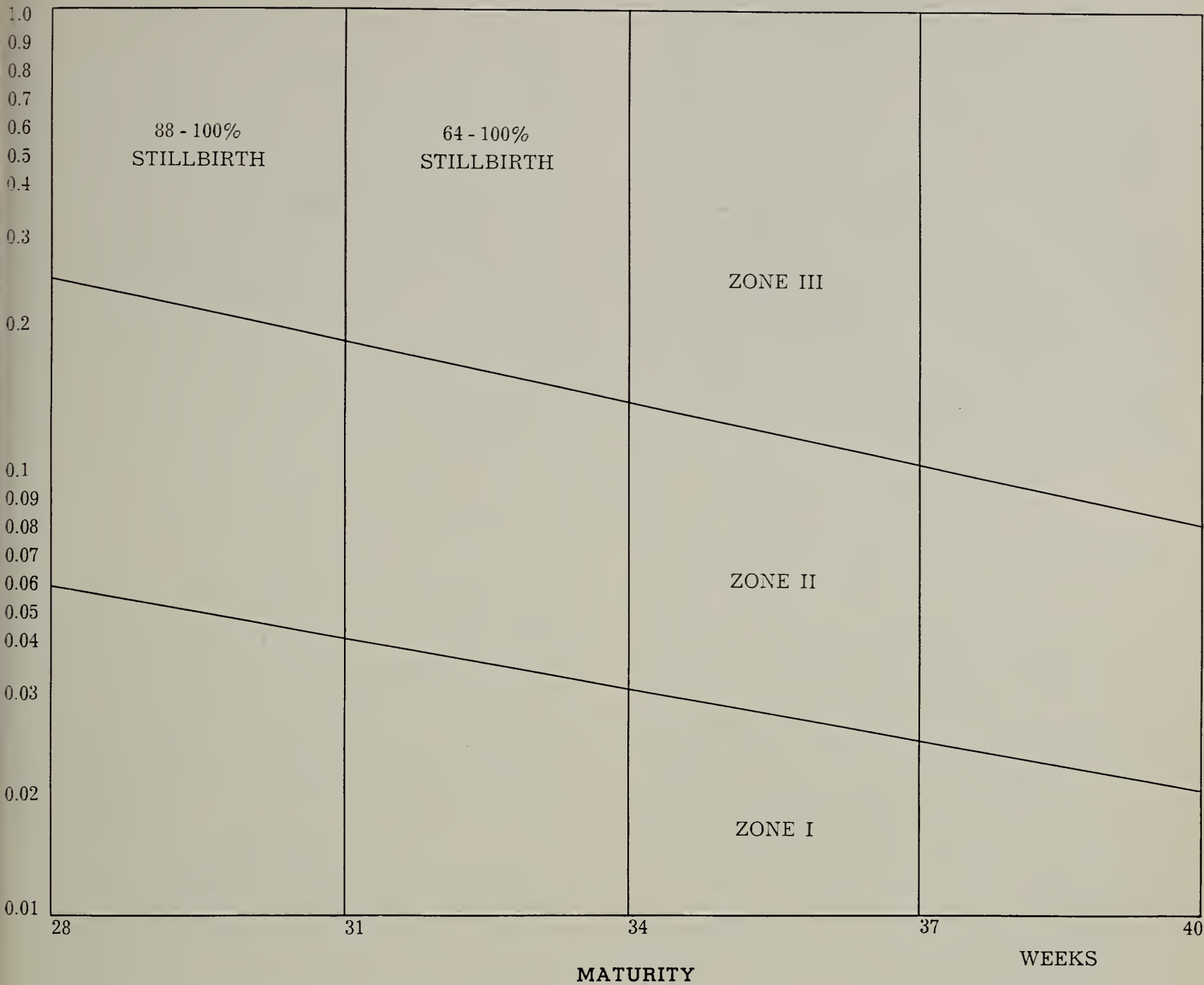
which seemed to relate directly to the procedure. There was an intrauterine death which occurred 1 hour after intrauterine transfusion. This fetus appeared by preoperative x-ray to be probably hydropic. The mother reported that for several days prior to the transfusion fetal activity had decreased considerably. One case of amnionitis occurred 48 hours following the procedure. This was treated with antibiotics and delivery, and resulted in a viable infant. There were two cases of premature labor prior to the planned date of induction. These cases could not be specifically related to the transfusions. Fetal complications during the procedure included inadvertently entering the pleural space, cecum, once each, and the bladder was entered twice. No fetal morbidity resulted from these incidents.

CASE REPORTS:

#1: Mrs. McN. was a 32 year old Para 2421, (term deliveries, premature deliveries, abortions, living infants), who had 4 stillborn premature infants. An amniocentesis done at 25½ weeks revealed an O. D. difference of .240. At 27½ weeks, a second amniocentesis showed an O. D. difference of .324 (Figure 1), which indicated an 88-100% chance of stillbirth if the pregnancy was allowed to go to term. X-ray gave the appearance of fetal hydrops. Seventy-eight c.c. of packed cells were given, but one hour after the transfusion, fetal heart tones were absent. A macerated stillborn fetus was delivered at 30 weeks of gestation. Post mortem examination revealed no evidence of internal damage by the needle.

Case #2: Mrs. McD. was a 30 year old Para 2001 with a history of an 8 lb. 8 oz. infant by Cesarean section for cephalo-pelvic disproportion and subsequently having a 5 lb. 10 oz. stillborn infant at 36 weeks. Amniocentesis at 28 weeks showed an O. D. difference of .305 (Figure 1) showing an 88-100% chance of intrauterine death. Intrauterine transfusion was performed at 29 weeks with 83 c.c. of packed cells. There was x-ray evidence of fetal hydrops, confirmed by withdrawal of 3 c.c. of clear fluid when the fetal thorax was entered inadvertently early in the procedure. This transfusion was given in two increments, the first of 53 c.c. which was injected directly, a further 30 c.c. injected twelve hours later through polyethylene tubing left indwelling for that purpose. A second intrauterine transfusion was done at 30½ weeks using 118 c.c. of packed cells. The patient developed amnionitis 4 days following the last procedure. She was treated with antibiotics and

OPTICAL DENSITY DIFFERENCE
OF 450 Mu PEAK



Graph. Adopted From
Liley, A. W.; Am. J. Obst. & Gynec, 86: 485, 1963.

then induced. A male infant was delivered vaginally weighing 5 lbs. 11 oz. with an apgar score of 8. Cord blood revealed a hemoglobin of 12.5 grams %, the direct Coombs was weakly positive, and the infant was initially typed as Rh Negative. Later testing was Rh Positive. The infant did not require an exchange transfusion. He did have severe respiratory distress which responded to the Usher regime. A 30 c.c. transfusion was required before discharge for anemia.

Case #3: Mrs. W. was a Para 1101. An amniocentesis done at 29 weeks revealed an O. D. difference of .216 (Figure 1), (a measurement lying between Zone III and Zone II). An intrauterine transfusion of 71 c.c. of packed cells was performed at 29 weeks. A second transfusion was done at 32 weeks, using 86 c.c. of packed cells. A

third transfusion at 35 weeks, using 118 c.c. of packed cells was well tolerated. At 36 weeks, the patient experienced spontaneous rupture of the membranes and went into spontaneous labor. A 4 lb. 6 oz. male infant was delivered whose cord blood revealed a positive Coombs and the infant was initially typed again as B Negative. The cord hemoglobin was 18.3 grams %. The indirect bilirubin was 12.5 milligrams %. Four exchange transfusions were required.

Case #4: Mrs. H. was a 25 year old Para 3003, whose last infant was affected, but needed only one "booster" transfusion. Amniocentesis fluid at 34 weeks revealed an O. D. difference of .18 (Figure 1, giving a 64% chance of intrauterine death). Clinically the menstrual history was in doubt, and the fetal size was estimated at under 4 lbs. The cervix was long and closed. An in-

trauterine transfusion was done at an estimated 34 weeks, using 118 c.c. of packed cells. Two weeks later, the patient was admitted in late labor with inaudible fetal heart tones. She was delivered of a 4 lb. 10 oz. male footling breech, with an apgar score of 1. The cord hemoglobin was 5.5 grams % and the hematocrit was 20%. Blood ph was 6.92 and the direct Coombs test on the cord blood was positive with blood type Rh Negative. The infant was vigorously resuscitated with endotracheal intubation and positive pressure oxygen. The first exchange transfusion was completed within 57 minutes of delivery. At 3 weeks of age a 75 c.c. transfusion was given.

Case #5: Mrs. O. N. was a 34 year old Para 5204 with a history of two infants requiring exchange transfusions, followed by a stillbirth. Amniocentesis fluid obtained at 29 weeks showed an O. D. difference of .290 (Figure 1, 88-100% chance of intrauterine death). An intrauterine transfusion was performed immediately, using 65 c.c. of packed cells. Three weeks later the third transfusion was performed, using 120 c.c. of packed cells and at 36 weeks an elective repeat Cesarean section was performed with the delivery of a 5 lb. 4 oz. female infant with an apgar score of 10. Cord hemoglobin was 15.5 grams %, cord blood direct Coombs was negative and the cord bilirubin was 8.9 mgm. %. One exchange was necessary at 3 hours of life.

Case #6: Mrs. E. B. was a Para 12009 with a proven Rh heterozygous husband, and a history of 3 consecutive intrauterine deaths before 37 weeks. Amniocentesis fluid obtained at 25½ weeks showed an O. D. difference of .266 (Figure 1). An intrauterine transfusion was performed after 26 weeks with 60 c.c. of packed cells. The second intrauterine transfusion was given at 28 weeks using 85 c.c. of packed cells. The third transfusion was given at 30½ weeks using 120 c.c. of packed cells, and the fourth transfusion was given at 33 weeks using 120 c.c. of packed cells. At 35 weeks the patient was delivered by repeat elective Cesarean section, and a 7 lb. 9 oz. male infant was delivered with an apgar score of 9. The initial cord blood Coombs was negative and the Rh was negative. The infant never was exchanged, but interestingly, the bilirubin eventually rose to a total of 50 mgm. % with only 12.5 mgm. % being indirect. The bilirubin fell slowly over a period of 6-8 weeks. A course in oral and intravenous dehydrocholic acid was used. Final diagnosis was inspissated bile syndrome.

DISCUSSION:

This group of patients is considered too small for valid statistical conclusions. However, 15 transfusions were performed on six infants with subsequent salvage of five of these. According to the information available from the amniocentesis readings, this was a better survival rate than would have been obtained by early induction alone in these patients.¹

The technique of transfusion proved quite satisfactory compared to those reported in the literature.^{2, 3} No difficulty was encountered with fetal movement during the procedures. Presumably this lack of movement was due to fairly heavy maternal sedation. This sedation seems superior to the use of a second needle to stabilize the fetus as reported by Liley and others.³ There have been reported many fetal complications due to kinking, torsion, and pulling out of indwelling plastic catheters.³ Only one was used in this series, and it was interesting to note that this infant (Case #2) changed from vertex to breech overnight with the catheter in place. Packed cells injected through a VXO20* polyethylene tubing resulted in an increase of serum hemoglobin from 18 mg. % to 31 mg. %. It was felt that this represented hemolysis of the R.B.C.'s, thus reducing the amount of usable hemoglobin. Because of the reported problems with the polyethylene tubing remaining in place, it was felt that direct transfusion had distinct advantages. The disadvantage of the single injection technique presumably lies in fetal cardiac compromise by over-distention of the abdomen. There is clearly no absolute way to avoid this problem. It is our feeling that a contributory cause of death in our one hydropic infant was over-transfusion.

Classically, hydrops has been a contraindication to transfusion. However, it was elected to transfuse cases one and two in spite of evidence of hydrops. One infant was salvaged. This suggested on a non-statistical basis that there may be some place for transfusion in hydropic infants. This has been confirmed by isolated reports in other series.³

As in most operative techniques, these procedures became easier with repetition. The last five procedures required less than one hour time, 1½ minutes of fluoroscopy time, and a single x-ray exposure. The author tended to differ somewhat from the usual philosophy regarding time of induction, which in the literature averages 32-34 weeks of gestation. It is a

* Bectin-Dickenson

well known fact that many errors in the expected date of confinement are made if the last menstrual period is the only criteria. To induce labor on the basis of dates only, is also dangerous. Therefore it is felt best to determine the transfusions and delivery dates on the basis of dates, estimated size of the fetus, and the past obstetric history. Certain of our patients, (Cases 3, 4, 5) were carried to at least 36 weeks of gestation because of clinically small fetuses. The infants probably survived because of this delay. Since at 32-34 weeks of gestation complications of prematurity are a severe threat, the suggestion is made that erythroblastotic infants managed by intrauterine transfusion may not need extremely early induction for survival. This hypothesis needs a larger number of cases to be substantially validated.

The author agrees with Liley and others^{1, 3, 4} who suggest two amniocenteses two weeks apart as a more accurate means of selection of candidates for intrauterine transfusion. Late referral of some of these patients precluded this. Finally, as reported by several authors, most of the transfused infants exhibited either weakly positive or negative indirect Coombs tests on cord blood specimens and were typed as Rh negative at birth because of the preponderance of donor blood.

SUMMARY

- 1. Fifteen intrauterine transfusions given to six fetuses are added to the literature with individual case reports.
- 2. The technique of intrauterine transfusion is presented with emphasis on advantage of (a.) heavy maternal sedation. (b) direct injection of blood through a single needle.
- 3. Suggestive evidence is given indicating possible advantages to the affected infant of later induction of labor than is currently the rule at most institutions. A plea is herewith made for further study of this concept with a larger series.

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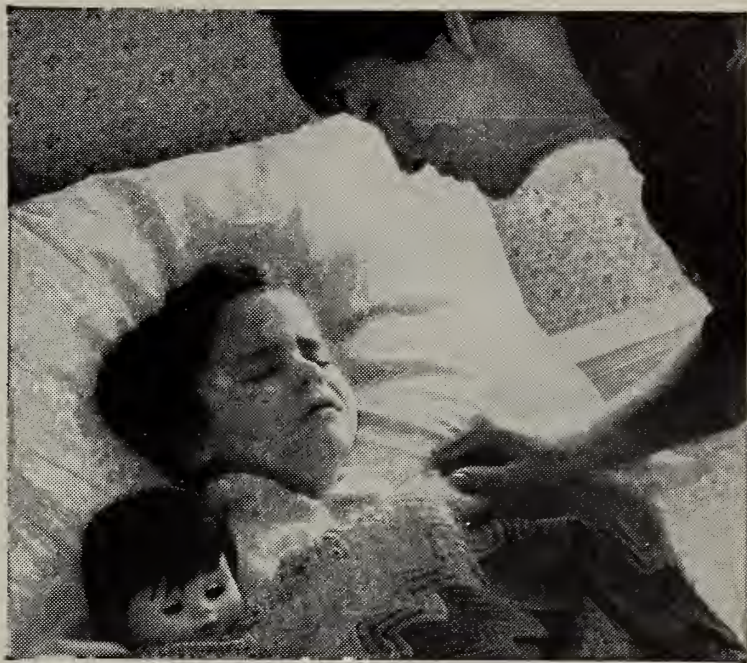
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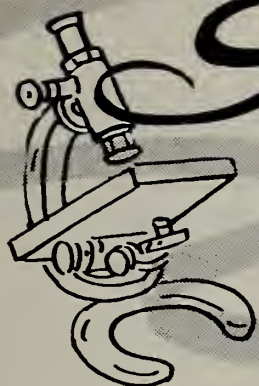
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*Stein, I.D.: Presented at the American Academy of General Practice, Dallas, Sept. 1967.

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Scientific P A P E R

PHYSIOLOGICAL EVALUATION OF SEALAB II*

Dr. Raymond J. Hock
Northrop Space Laboratories
Captain George F. Bond, MC, USN.
Captain Walter F. Mazzone, MSC, USN.

A unique opportunity of observing man in a 7-atmosphere, helium-oxygen environment was provided by the U. S. Navy in the SEALAB II experiment during the fall of 1965.

Details of the physiological monitoring of that experiment have now been released by the Navy. The areas reported are:

1. Respiratory functions
2. Hematology
3. Blood chemistry
4. Urinalysis
5. Urinary chemistry
6. Saliva
7. Electrocardiograph (ECG)
8. Blood pressure
9. Body temperature
10. Pulse
11. Gas uptake and elimination

During the SEALAB II experiment, an underwater habitat was established on the ocean floor at a depth of 205 feet off La Jolla, California, for 45 days from late August to mid-October 1965.

Twenty-eight Navy men occupied the SEALAB habitat in three teams of ten men, with each team down for 15 days. One man — Astronaut/Aquanaut M. Scott Carpenter —

spent 30 consecutive days in the habitat and another man spent 15 days down with the first team and another 15 days with the second. The mean age of the participants was 35 years, with a range from 25 to 50 years.

During the SEALAB experiment samples of the habitat atmosphere, and Aquanauts' blood, urine, saliva, and breath were analyzed on the surface support ship as were the Aquanauts' blood pressure, body temperature, and pulse.

However, operational demands and work schedules made ideal physiological sampling impossible, thus statistical methods were also employed in the study. The Aquanauts were divided into groups with specific kinds of data (e.g., hematological) collected from each group; hence, the data collected were rarely inclusive of all of the Aquanauts.

The conclusions of the physiological monitoring, as described in the recently released report by Raymond J. Hock, Ph.D. (Northrop Space Laboratories), Captain George F. Bond, Medical Corps, U. S. Navy, and Captain Walter F. Mazzone, Medical Service Corps, U. S. Navy, follow.

(The day of exposure to SEALAB is used to combine all data for the men in the various teams. Thus, the day of descent is Day 0, and Day 1 means one full day of exposure. With the exception of Commander Carpenter, total consecutive exposure for all men was thus 15 days. The atmosphere in the SEALAB habitat was 3.5 to 5% O₂, less than 18% N₂, less than 0.4%

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CO₂, and 77 to 79% He; the temperature inside the habitat was maintained at between 85 and 89°F with a relative humidity of about 76%.)

CONCLUSIONS

Oral temperature rose immediately on exposure to SEALAB and continued to rise for 4 days. Peak temperature reached at this time showed mean of $100.0 \pm 0.08^\circ\text{F}$, a rise of 1.5°F from the baseline mean value. A slow decline appeared after this, but temperature remained about 1°F above pre-exposure levels. Post-dive data showed rapid return to normal. The rise during occupation of the SEALAB habitat is highly significant statistically. This rise may be the result of higher heat loss due to the greater thermal conductance of helium, with consequent greater heat production and new higher thermoregulatory setting.

Pulse rate increased during the dive period from mean of 71.4 ± 2.4 pulse/minute, to 84.9 ± 2.7 on the second full day of exposure (Day 2). A general trend downward followed, but rates remained higher throughout the exposure than baseline values. These determinations were made on nearly all the men. Heart rate, as counted from electrocardiographic (ECG) traces, showed a slight decrease, marked on Day 3. Only a small number of men were used for these heart rate determinations in contrast to the large number used for pulse rate. Thus, the discrepancy between results must be ascribed to the relative numbers of subjects, and greater reliance placed on the pulse rate determinations. Slight arrhythmias were found in some electrocardiographic traces.

Systolic pressure rose slightly until the fifth full day of exposure (Day 5), when mean was 133 mm Hg compared to baseline of 127. Diastolic rose from 80 to 86 mm Hg in the same period. Values remained relatively constant for the duration of exposure, with a slight trend down in systolic pressure. These results probably indicate a slight cardiovascular response to stress.

Electroencephalography showed slight transient changes during the stay on the ocean bottom. No changes of permanent nature were noted on post-dive examination.

Erythrocyte number during the dive markedly decreased, from mean baseline values of 5.60 ± 0.22 million/mm³ to 4.25 ± 0.13 on Day 3. These low levels were maintained until Day 9, after which a slow trend toward normal is manifest. The marked changes do not show statistical validity only because baseline and dive subjects were not always the same, and small numbers

of subjects were used. Additional time in SEALAB, as exemplified by the one man who spent 30 consecutive days there, did not cause further rise toward normal values. The observed decrease in RBC may be a result of slightly increased ambient pO₂. This change is conjectured as due to fluid balance shifts, sequestration of cells in the spleen or other vascular compartment, or actual increased rate of erythrolysis.

Total leucocyte count showed no consistent change. Neutrophils showed a slight steady decrease, and a replacement of this number by a concomitant increase in lymphocytes. These changes may also be due to increased pO₂.

Hematocrit ratio changed relatively little when the original baseline is considered. However, a second baseline taken immediately before the dive showed mean of 47.8 ml/100 ml, a fall to 45.6 on Day 2, and rise to 50.0 on Day 13, with post-dive value of 50.4. Hemodilution would explain the decreased values. It should be noted that the major decrease in erythrocyte count should normally be matched by a similar decrease in hematocrit. The fact that this did not occur points to a possible procedural error in the red blood cell count, or one of the other possibilities mentioned under the discussion for this parameter.

Hemoglobin level fell from baseline mean of 15.35 ± 0.15 gm/100 ml to low value of 13.0 ± 0.74 on Day 3. It rose slightly for the duration of the SEALAB exposure, and returned to higher than normal values immediately after the experiment. These changes may also be due to slightly increased pO₂.

Reticulocyte fall appears to indicate retarded erythropoiesis in the first days of exposure, followed by resumption of near-normal levels of cell production.

Platelet count increase was probably due to general stress. Sedimentation rate remained normal, although a slight decrease appeared evident.

Blood electrolyte changes included increases in serum sodium and potassium (on the basis of Horvath's figure immediately pre-dive). Calcium, chloride, and other measured parameters revealed no change. Serum CO₂ and other biochemical factors did not change in the Aquanauts. The electrolyte changes may reflect blood PH changes, although data is not available to substantiate this hypothesis. The lack of change in blood gases indicates normal physiological functioning in this respect in the SEALAB atmosphere.

Comparisons of exposure values with Horvath's baseline data taken immediately before the dive show a clear increase in serum glutamic oxaloacetic transaminase. Immediately on return to sea level normal values were resumed. Serum glutamic pyruvic transaminase also increased, as did lactic acid dehydrogenase. This general increase in all serum enzymes is probably a response to the multi-factorial environmental stresses, or alternatively, to the increased exercise under difficult and unusual conditions.

Urine volume showed an initial increase, probably due to diuresis imposed by the cold water. However, the trend back to baseline may reveal poor urine collection methods. Specific gravity increased slightly throughout the experiment.

Urine sodium appears to have increased, as did calcium and potassium. Phosphorus and creatinine may also have increased, but the erratic swings in value may indicate procedural errors. Such changes as did occur reflect stress, exercise, and /or dehydration.

Imposed exercise studies revealed no decrement in performance with time of exposure, although subjective feelings of lassitude and fatigue were reported.

Swimming in cold water caused marked reduction in extremity temperature and usually slight rise in central body temperature. On re-entering SEALAB, and especially following a hot shower, rectal temperature fell markedly, presumably due to shunting of blood to the periphery due to vasodilation. This may in part explain the "paradoxical shivering" observed after the warming period.

Studies on erythropoiesis revealed no significant changes.

Maximal work capacity decreased after the dive. Increase in metabolic response to cold stress with loss of body heat also occurred, thus indicating increased cold tolerance.

Neurological changes did not result from the SEALAB exposure, and psychophysiological studies revealed no prolonged deleterious effects of the exposure.

In general conclusion, the changes that were apparent in the measured physiological functions were of a mild, transitory nature. Where post-exposure data was taken, it was found that immediate return to pre-dive levels occurred. A few changes, among them body temperature and erythrocyte number, reflect greater and probably significant change.

The multiple stresses imposed by the environmental conditions which constitute the SEALAB exposure all have their potential effects on the physiological responses. Elevated partial pressure of oxygen, high levels of exercise (and poor sleep?), high temperature and humidity, and swimming in cold water all appear to be implicated in the environmental factors operating to cause changes, either singly or in combination. The high helium content of the atmosphere does not seem to be implicated, except for its role in increasing heat loss through high thermal conductivity. High pressure *per se* does not appear to be directly implicated, but may be part of the general stress.

Although the SEALAB II exposure appears from this analysis of data to have had relatively innocuous effects on the participants, extension of these findings to greater depths or for longer periods of time must be done with care. The great success of this program to date insures the validity of its basic concepts, and its operational extension will now depend on the further careful progress that has characterized it to date.

SEALAB III

Similar physiological monitoring, conducted under vastly improved conditions, will be conducted at a depth of 430 feet off San Clemente Island, California, during the spring of 1968. During SEALAB III five teams of eight divers each will spend 12 days of living and working on the ocean floor. Personnel from several government agencies will join Navy Aquanauts in this phase of the Navy's Man-in-the-Sea program. Captain George F. Bond, MC, U. S. Navy, will also serve as principal investigator for the SEALAB III experiment.

The American Cancer Society publishes booklets and brochures on prevention, detection, diagnosis and treatment of cancer. These educational materials are available free to members of the medical profession from the local ACS offices.

The Tenth International Congress on Diseases of the Chest sponsored by the Council on International Affairs of the American College of Chest Physicians will be held in the Washington Hilton Hotel, Washington, D. C., USA, October 4-8, 1968.



"George wants to know if it's okay to take his cold medicine now, Doctor, instead of seven o'clock?"

CLINICOPATHOLOGICAL CONFERENCE - SIOUX VALLEY HOSPITAL

From the Intern and Resident Teaching Conferences of the Sioux Valley Hospital, Sioux Falls

John F. Barlow, M.D.*
Pathologist — Editor



E. Stephen Kahler, M.D.**
Internist — Discusser

CASE PRESENTATION SVH NO. 417516

This 61-year old Caucasian female entered Sioux Valley Hospital because of fatigue, anorexia and weight loss of about eight months duration. Eight months previously she had noted fatigue and anorexia. She was placed on a weight reduction diet and lost 70 pounds. Five months prior to admission diabetes mellitus was discovered and she was placed on oral diabetic therapy. Shortly before admission hepatomegaly was noted for the first time.

Past history included a cholecystectomy two years previously for subacute cholecystitis and cholelithiasis and a hemorrhoidectomy three years previously. On those admissions hemoglobins, hematocrits, white counts and differentials were within normal limits and no hepatosplenomegaly was noted. She had been known to be hypertensive in the past, but in the past three years was normotensive without medications. She gave no history of dyspnea, gastrointestinal complaints, or recent blood loss.

Physical examination on admission revealed blood pressure of 150/64. She was a sallow, obese Caucasian female in no distress. There was no lymphadenopathy. The fundi showed no evidence of diabetic retinopathy. The chest was clear. There was a Grade II systolic ejection murmur heard at the apex. A^2 was greater than P_2 . The liver was 4 cm. below the costal margin and the spleen was 1-2 cm. below the iliac crest and tender. There was 1+ edema of the left lower leg. Neurologic examination was unremarkable.

Laboratory data showed 0-2 WBC/hpf in the urine sediment and moderate amounts of bacteria, specific gravity 1.018, pH 5.5, no glucose or protein. Hgb. was 8.0 gms%, red count 3.59 million/mm,³ Hct. 27%, MCH 22 micro-micrograms, MCV 76 cubic micra, MCHC 30%, white

count 23,000/mm with 31% polys, 1% bands, 1% eosinophils, 19% lymphocytes, 6% metamyelocytes, 15% myelocytes, 2% promyelocytes, 16% myeloblasts. Platelets appeared increased with many bizarre forms. The red cells showed marked anisocytosis and poikilocytosis with polychromatophilia and numerous "teardrop" forms. Ten to thirty nucleated red cells were present per 100 leukocytes. Reticulocyte count was 3.0%, platelet count was 820,000/mm.³ The VDRL was nonreactive; leukocyte alkaline phosphatase was 120 (normal 18-58). ESR was 26 mm/hr. Partial thromboplastin time was prolonged at 56.0 seconds compared to a control of 38.0 seconds. Prothrombin time was 21.0 seconds with a control of 13.0 seconds. BUN was 15 mg.%. Bilirubin was 1.2 mg% total with 1.0 mg% indirect and 0.2% direct. Thymol turbidity was 1.0 units. Alkaline phosphatase 0.9 BL units (normal 0.8-2.3 BL units). Cephalin flocculation was 3+ in 48 hours. Chest film revealed a slightly enlarged heart. There was a nodular calcification in the upper left lung field which had been present since 1963. The lung fields were otherwise clear. An X-ray skeletal survey series was negative. Two initial attempted aspirations of sternum and ileum yielded no marrow. A bone marrow biopsy was then performed.

CLINICAL DISCUSSION

Dr. E. Stephen Kahler: The case is that of a lady in her early sixties with a short history of fatigue, anorexia and a significant weight loss. Mild diabetes was recently discovered. Significant findings in the past history were that she had normal hematologic studies during previous admissions for cholecystectomy and hemorrhoidectomy. No enlargement of the spleen or liver was noticed on these admissions. This was confirmed since the abdomen was opened during the gallbladder surgery.

On physical examination the patient had normal blood pressure in spite of the past history of hypertension. She was slightly overweight and pale. A significant finding was the absence of lymphadenopathy. The systolic murmur des-

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cribed could have been related to a mild degree of mitral valvulitis or more likely was related to the relatively severe anemia. A very significant finding is the enlargement of the liver and marked enlargement of the spleen which was firm and tender.

Findings on urinalysis are not helpful. Red blood cell indices show a slight microcytosis with decreased mean corpuscular volume and mean corpuscular hemoglobin. There is a suggestion of mild hypochromia with a mean corpuscular hemoglobin concentration of 30%. However, hypochromia is not mentioned in the description of the smear. The white count is elevated and there is a marked shift-to-the-left with 16% myeloblasts. A very impressive finding is the marked variation in size and shape of the red cells with many teardrop forms and polychromatophilia. There were many nucleated red cells in the peripheral blood and the platelets were increased with bizarre forms. This blood picture certainly suggests that the body is responding to some adverse phenomenon and trying to put out increased amounts of blood. This picture that I have described is characteristic of myelophthisic anemia, meaning that the marrow has been replaced for one reason or another and that there is an associated extramedullary hematopoiesis. When the body tries to make blood in extramedullary organs such as the spleen and liver, there is a variety of immature cells found in the peripheral blood. These immature forms are usually only seen in marrow and not in the peripheral blood unless there is some severe stress or marrow replacement. The immaturity occurs in both the white and red cell series. There is usually a spectrum from the very mature to the very immature including blast cell forms of the white cell series, as in this case. Certain toxins such as benzene may cause this picture although benzene usually causes an aplastic anemia.

Another disease which must be considered is acute or chronic myelogenous leukemia. There is a high white count and many blast forms in the peripheral blood. Such a high number of blasts in the peripheral blood is unusual for just a myelophthisic replacement of the marrow. This could represent a blast crisis in chronic myelogenous leukemia. In chronic myelogenous leukemia there is usually an increased serum Vitamin B₁₂ while this is not present in myeloid metaplasia or other forms of myelophthisic anemia. However, this test was apparently not performed here. Another important differential test is the leukocyte alkaline phosphatase,

which is usually low in chronic myelogenous leukemia, but normal or increased in other conditions. There are a few exceptions to this which I will discuss later. The value for leukocyte alkaline phosphatase was high in this case. This finding is against chronic myelogenous leukemia. Infection should definitely be considered, especially miliary tuberculosis with a high white count and "shift-to-the-left," the so-called leukemoid reaction. I would like to ask the patient's physician if there was a history of fever or chills or night sweats.

Dr. Warren L. Jones*: No, not to my knowledge.

Dr. Kahler: If there had been fever, I might be suspicious of miliary tuberculosis originating from the nodular calcified lesion in the left upper lung field. Disseminated tuberculosis can cause the picture above, especially with the high white count and immaturity. Myelofibrosis may even result.

Still another possibility to consider is that of metastatic carcinoma to bone and marrow which could give rise to a myelophthisic anemia with this blood picture. However, we do not have much to support this hypothesis. There is a negative skeletal X-ray series with the fairly abrupt onset of diabetes. One might possibly suspect an occult carcinoma of the pancreas. However, pancreatic carcinoma does not usually give rise to diffuse bone metastases. Also there is no abdominal pain here which is common in carcinoma of the pancreas. I might suspect other lesions such as carcinoma of the prostate or stomach. Therefore, I would tend to exclude metastatic carcinoma to the bone marrow. I should also mention at least disseminated granulomas other than tuberculosis such as brucellosis or sarcoidosis. Finally we might consider myelofibrosis, myelosclerosis, or agnogenic myeloid metaplasia. In this disease there is typically an over-production of fibrous tissue and/or bone with replacement of the marrow and with extramedullary hematopoiesis, usually in the spleen or liver. All the findings in this case could be attributed to this disease of unknown etiology. I believe the case best fits this entity. The blood picture with bizarre platelets and red cells, and immaturity of both red and white cell forms in the peripheral blood, the marked splenomegaly and hepatomegaly without lymphadenopathy, the anorexia, fatigue, and weight loss all are seen in myelofibrosis or, as it is sometimes called, agnogenic myeloid

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metaplasia. The white blood cell count may be normal, increased, or decreased in myeloid metaplasia. Often it is increased with immaturity of cells as in this case. The percentage of blast forms is much higher than is seen in the usual case of myeloid metaplasia.

It is sometimes very difficult to distinguish chronic myelogenous leukemia from myeloid metaplasia. In fact, myeloid metaplasia often progresses into chronic myelogenous leukemia. Pathologists may sometimes argue which disease the patient had and may be unable to decide even after post-mortem examination. It should also be noted that polycythemia rubra vera may progress into myeloid metaplasia. In this case we have no suggestion of this with the earlier normal hematologic values.

The platelet count is interesting in that it is elevated. The platelet count may be raised after a number of stresses such as trauma, asphyxiation, surgery, acute blood loss, and most markedly, after splenectomy. The platelets are often increased in both chronic myelogenous leukemia and myelofibrosis. In myelofibrosis there are many megakaryocytes in the liver and spleen, and often fragments of megakaryocytes are seen in the peripheral blood as well as enlarged bizarre platelets such as are described here. The elevated platelet count is therefore not of much help in the differential diagnosis.

I would like again to mention the leukocyte alkaline phosphatase test. As I stated earlier, it is usually decreased in chronic myelogenous leukemia and normal or increased in myeloid metaplasia. It is also increased in polycythemia rubra vera, during steroid therapy, or in leukemoid reaction secondary to infection, in pregnancy and in the trisomic form of mongolism. However, there have been some cases reported recently (ref. 7) in which the leukocyte alkaline phosphatase in chronic myelogenous leukemia was not depressed, but normal or elevated. The "Philadelphia" chromosome was found in such a case. I should discuss this interesting finding, the presence of so-called "Ph" or "Philadelphia" chromosome, found almost exclusively in chronic myelogenous leukemia. This is a deletion of the number 21 chromosome. This abnormal chromosome can also probably be found in related conditions such as myeloid metaplasia although there is some argument about this. (ref. 8) I could find three cases in the literature in which the picture suggests chronic myelogenous leukemia and the "Philadelphia" chromosome was present, but in which the leukocyte alkaline phosphatase was increased. The three

cases of which I spoke each had other disease processes. One had carcinoma of the lung (ref. 15), another ulcerative colitis (ref. 16), and a third, a combination of ankylosing spondylitis, psoriasis and iritis (ref. 7). Therefore, my conclusion is that the leukocyte alkaline phosphatase cannot be used as an absolute diagnostic test for chronic myelogenous leukemia. If increased, it does not completely exclude the diagnosis. It would have been interesting to have done chromosome studies for the "Philadelphia" chromosome in this case. Rare cases of apparent chronic myelogenous leukemia without the "Ph" chromosome have been reported. I don't believe X-rays were helpful in this case.

Dr. Bryson R. McHardy*: The chest film shows the nodular calcification in the lung field described in the protocol. The bone survey is negative.

Dr. Barlow: Dr. Jones took care of this lady. How did she present to you, Warren?

Dr. Jones: With weight loss, hepatosplenomegaly, and sallow complexion, my initial diagnosis was cirrhosis which I suspected despite the fact that she definitely was not an alcoholic. However, normal liver function tests and the abnormal initial hematological work-up altered my view. After a sample of bone was obtained, the diagnosis was much more apparent.

Dr. Kahler: I would like to make one final point and that is about so-called "dry taps" on attempted marrow aspiration. I think it is often felt that a "dry tap" means an aplasia of the marrow. This is not necessarily true because a marrow "jam-packed" with either acute or chronic leukemia cells may be similarly impossible to aspirate. Also, of course, fibrosis of the marrow would also give a "dry tap." In cases of fibrosis, aplasia, and the "jam-packed" marrow of leukemia, a needle biopsy may be very helpful in making a diagnosis. If the biopsy is unsuccessful, then an open marrow biopsy is mandatory.

Dr. Stephen Kahler's Diagnosis: 1. Agnogenic myeloid metaplasia with extramedullary hematopoiesis (myelofibrosis).

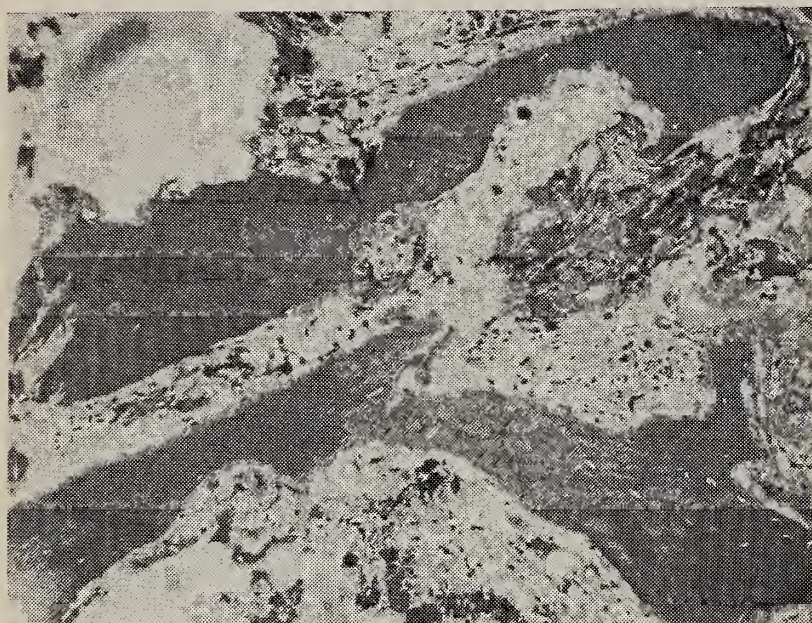
PATHOLOGIC DISCUSSION:

Dr. Barlow: The procedure performed in this case was a trephine needle biopsy of the marrow. This procedure, as Dr. Kahler mentioned, is sometimes helpful. In the present case it was diagnostic. Photomicrographs of our biopsy show active bone formation with proliferation and destruction as well as extensive fibrosis of

* Radiologist, Sioux Valley Hospital.

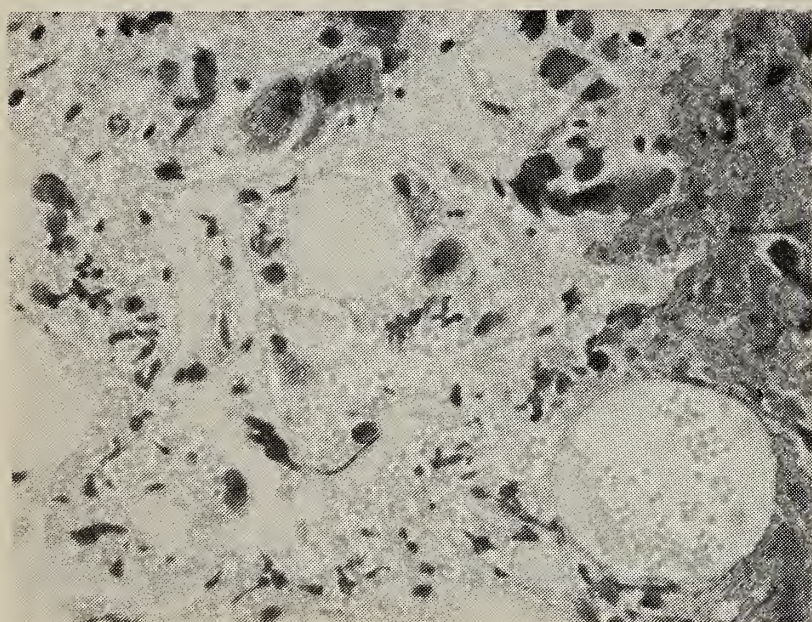
the marrow with loss of marrow elements. (Figures II and III) There is an abundance of megakaryocytes which appear as large and bizarre forms. These can be mistaken for metastatic carcinoma. In fact, I have seen cases in which there were multiple osteolytic lesions in myelofibrosis and a similar bone marrow picture. In this particular case, metastatic carcinoma was suspected, but the patient lived many years and finally the diagnosis of myeloid metaplasia was established. (ref. 10)

Figure II



Note hypocellularity and fibrosis of the bone marrow biopsy of posterior iliac crest.

Figure III

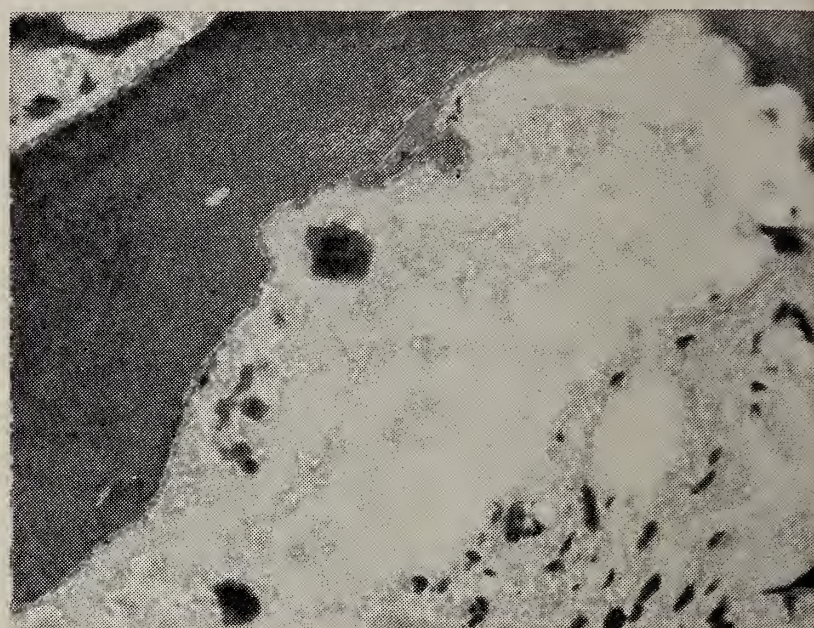


Note prominent megakaryocytes and almost total absence of myeloid and erythroid precursors. These megakaryocytes in fibrous tissue have been mistaken for metastatic malignancy.

Dr. Karl H. Wegner*: A point that might be made here is that the initial marrow examination in a patient with agnogenic myeloid metaplasia may show a hypercellular, hypocellular, or even a normal bone marrow. The changes

of fibrosis are focal at first and may not involve the whole marrow. Therefore, even if the patient does not have a diagnosis of fibrosis on the marrow biopsy, but does have a compatible peripheral blood picture and clinical findings of marked hepatosplenomegaly, a diagnosis of myelofibrosis should not be discarded. Biopsies of the marrow usually will ultimately show a diagnostic picture.

Figure IV



A marrow trabecula with osteoclast showing increased bone activity in myelosclerotic bone marrow. At bottom of picture marrow is fibrotic.

Dr. Barlow: Yes, we have had a recent case in which the patient had a large spleen and a peripheral blood smear similar to the one presented. The first marrows on this lady were not very abnormal and a good aspirate was obtained with relative ease. However, later specimens showed characteristic myelofibrosis.

Dr. William O. Rossing*: An important point in the differential diagnosis between myeloid metaplasia and chronic myelogenous leukemia is that in the former there are usually many more nucleated red cells as in this case.

Dr. Wegner: I might mention that our laboratory has performed chromosome studies in the past and has demonstrated the "Philadelphia" chromosome. This work was done by a Harvard College student, Mr. Lee Snyder. Since he returned to college we have been unable to find the time or personnel to maintain the excellent work he initiated.

I might also add that although the leukocyte alkaline phosphatase is not a specific test for chronic myelogenous leukemia, the presence of the "Philadelphia" chromosome is also not always diagnostic. A number of cases clinically

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and pathologically behaving like chronic myelogenous leukemia have had no demonstrable "Philadelphia" chromosome. (ref. 14) Especially in elderly patients the diagnosis of chronic myelogenous leukemia may be difficult. Furthermore patients with myeloid metaplasia also have been reported as having the "Ph" chromosome. (ref. 8)

Another point of interest is that it has been postulated that the deletion of the 21 chromosome (Philadelphia chromosome) and the low leukocyte alkaline phosphatase activity were related. This relationship was also suggested by the increase in leukocyte alkaline phosphatase in the trisomy 21 of Down's syndrome (Mongolism). (ref. 17, 18) However, as has been pointed out there may be a disassociation between the presence of the "Philadelphia" chromosome and the level of the leukocyte alkaline phosphatase. Normal or raised values may also occur in remission, transition to the acute blastic phase or in infection occurring in chronic myelogenous leukemia. (ref. 7, 15, 16)

Dr. Barlow: Dr. Jones, will you discuss the patient's course after the diagnosis was made.

Dr. Jones: After the diagnosis was established, myleran therapy was initiated. I was treating the white count and systemic symptoms as well as the enlarged spleen. The white count decreased and the spleen receded. However, over a period of a few months, the patient continued to manifest a down hill course with weight loss and weakness. We were not able to keep up the myleran continuously because of depression of the white count. She developed an intermittent pericardial friction rub, congestive heart failure, and experienced several episodes of pulmonary edema. She never did develop a pericardial effusion, which I suspected she might from the pericardial friction rub.

Blood transfusions were required to correct the anemia which developed. One interesting point in her course was the transient appearance of about 80% blasts in the peripheral blood. At this point, we treated her with 6 mercaptopurine and the blast phase receded quickly. I never was quite sure what was happening. I'm not satisfied that the chemotherapy did a great deal of good. Her course was just short of one year after the diagnosis. Unfortunately, an autopsy was not obtained. If I were to treat this patient again, I think I would consider a splenectomy earlier in the illness. This might have alleviated some of the anemia which developed in conjunction with the splenomegaly

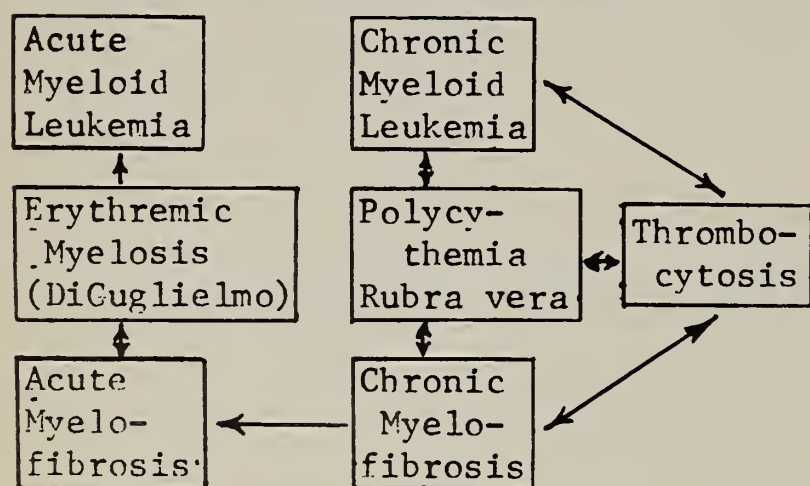
with hypersplenism. At any rate, I would like to throw the idea of splenectomy open to discussion here.

Dr. Kahler: Some years ago, a number of reports showed that splenectomy in myeloid metaplasia was extremely dangerous. It was thought at that time that the extra-medullary hematopoiesis was compensatory and supplied the cellular elements of the blood for the body. These reports showed dire consequences with many fatalities secondary to splenectomy. More recently, however, the pendulum seems to have swung the other way and some authors now feel that the spleen should be removed in myeloid metaplasia as soon as the diagnosis is made. This may prevent painful splenic infarcts as well as pressure symptoms on bowel and bladder and general abdominal discomfort due to the enlarged spleen. Splenectomy also decreases the amount of hemolysis secondary to hypersplenism. One problem you may encounter, however, is that of severe thrombocytosis occurring after splenectomy. Why this happens is poorly understood. With extreme thrombocytosis, both intravascular clotting and abnormal episodes of bleeding may occur. In this particular case, I think I would try to suppress the platelets with chemotherapy prior to a possible splenectomy.

Dr. Barlow: I have already shown the photomicrographs on this interesting case of myelofibrosis. I would like to summarize an excellent article by Bouroncle and Doan. (ref. 1) Many of the salient points of this disease have already been stated. First, there are a large number of synonyms for it. They include myelofibrosis, agnogenic myeloid metaplasia, leukoerythroblastic anemia, aleukemic myelosis, osteosclerosis, myelosclerosis, chronic non-leukemic myelosis, megakaryocytic myelosis, and splenomegaly with sclerosis of bone marrow. All of these rather bombastic names describe an entity the etiology of which is completely unknown. Some of the theories have been that myeloid metaplasia is a) a variant of myeloid leukemia, b) a compensatory mechanism due to primary bone marrow anomaly, c) a mesenchymal reaction to injury or necrosis of the bone marrow and d) a part of the myeloproliferative syndrome. Since extra-medullary hematopoiesis is seen in many states as a compensatory phenomenon, it has been supposed that the extra-medullary hematopoiesis is compensatory. This is why removal of the spleen has in the past been considered dangerous. If the spleen is compensating, then splenectomy

would be harmful. However, the most popular theory of the disease at the present time is that it is part of the spectrum of myeloproliferative syndromes. In this category are included myelofibrosis, polycythemia rubra vera, chronic myelogenous leukemia, essential thrombocythemia, and erythremic myelosis (Di Guglielmo's syndrome). It is felt that in chronic myelogenous leukemia the myeloid elements exhibit proliferation. In polycythemia rubra vera all elements exhibit proliferation (especially the erythroid) and in essential thrombocythemia, the platelets exhibit proliferation. In the marrow of myelofibrosis it is believed that the mesenchyme proliferates into fibroblasts and similar cells in the liver and spleen are precursors of the hematopoietic elements in these organs. One fact substantiating this argument put forth by Dameshek is that certainly any of the syndromes mentioned may convert one into the other. The following figure represents interconversions which have been seen in patients during the course of their illness.

Figure I
MYELOPROLIFERATIVE SYNDROMES



(Fig. I) Certainly, the conversion of polycythemia rubra vera into myelofibrosis is common as is the conversion of chronic myelogenous leukemia into acute myelogenous leukemia. We may have had a conversion of myelofibrosis into an acute leukemia in this case, but unfortunately, there was no autopsy to prove it.

The two major pathological findings in this disease are fibrosis of the marrow with or without concomitant bone proliferation and extensive extra-medullary hematopoiesis, especially in the liver and spleen. All elements of the marrow are usually represented in these organs.

The clinical symptoms are typical in this case and include weakness, fatigue, weight loss, and pallor. There is usually marked splenomegaly and moderate hepatomegaly. The disease usually occurs in patients over 50 years old.

Besides having all the classical symptoms, this patient also exhibited the characteristic hematologic smear. Any of the formed elements of the blood may be normal, increased, or depressed. There are usually many nucleated red cells as well as a full range of myeloid elements from mature to immature. Doan described a blastic phase in myelofibrosis such as this patient had. He felt that such a phase indicated a poor prognosis, a fact also borne out in this case. Bizarre platelet forms with megakaryocyte fragments occur and were present late in this patient's course. A qualitative defect in platelets has also been found in this disease. The marked aberrations in red cell morphology with "teardrop" forms were also seen.

As was pointed out by Dr. Kahler it must be stressed that this hematologic picture may occur in any process markedly infiltrating marrow, such as tuberculosis or metastatic carcinoma. However, the other clinical signs are usually different.

Therapy for this disease has included androgens to stimulate hematopoiesis, splenic irradiation, myleran or splenectomy to reduce pressure effect of the spleen and the depressive effects of hypersplenism on the formed elements of the blood, 6-mercaptopurine for blastic crises, steroids for the hemolytic anemia, and transfusions for symptomatic relief of the anemia. Antimetabolites such as myleran also tend to decrease the systemic symptoms such as weakness and anorexia. Fifty-five of eighty-five patients traced by Doan et al (ref. 1) died within 27 months. The causes of death were usually infection, blastic crises, or intercurrent disease.

FINAL ANATOMIC DIAGNOSIS MYELOFIBROSIS (Agnogenic Myeloid Metaplasia)

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(Continued on Page 76)



THE PHYSICIAN'S ROLE IN THE DETECTION AND MANAGEMENT OF INBORN ERRORS OF METABOLISM

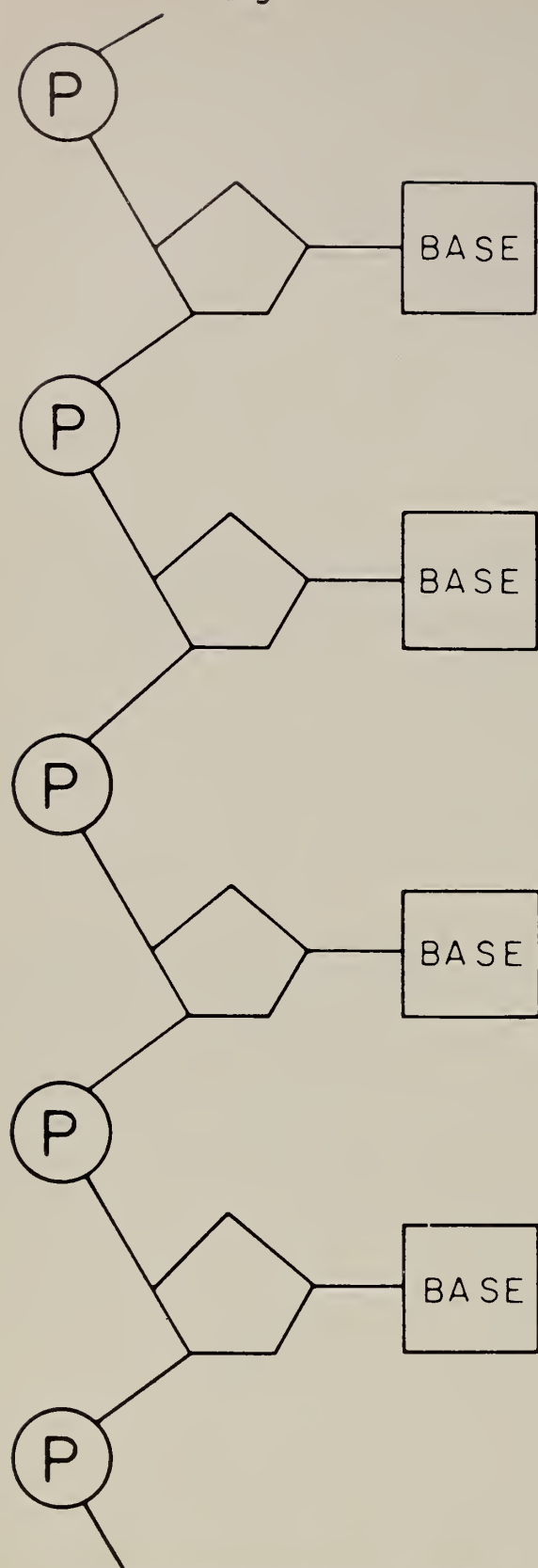
Donough O'Brien, M.D., F.R.C.P.E.*

In the last two decades the frontiers of child health in North America have changed very substantially. Whilst continuing responsibilities for infant care and minor infections remain, the major threats of infectious disease have largely dissolved. Very real challenges persist in neoplastic diseases, in autoimmune syndromes and indeed in the simpler but equally hard to solve problems of motor vehicle and other accidents. It is true that in the underdeveloped areas of the world, diseases like measles and malnutrition, still take a frightening toll but in the U.S.A. and Canada advances in health research have brought new objectives to the fore. One of the most important of these is the congenital malformations of which the inborn errors of metabolism are the most easy to explore. This group of disorders remains rare, but increasing technical expertise is rapidly adding to the list and before long, some of the common behavioural disorders may be explained in these terms. Most physicians including pediatricians, may still expend their professional lives, at least after residency, with only minimal encounters with this range of diseases. They have an importance, however, that transcends their actual incidence because of the light they have shed on the basic mechanisms of protein replication and the heritance of information.

It is appropriate as part of this discussion to review very briefly the basic theorems involved. To begin with, it is important to understand that all sources of misinformation and therefore, of inborn errors of metabolism are fundamentally defects of information that lead to a critical absence of, or alteration in a natural protein not necessarily, however, in an enzyme. The study of the Watson-Crick formula for DNA and the Jacob-Monot hypothesis of feed-back control, illustrates the normal mechanisms for transferring biological information. It will be recalled that coding of amino acid sequence is primarily contrived in terms of a sequence of triplets of purine or pyrimidine bases, (Figure 1). The operator or replicating segment of each gene is in turn controlled by a regulator gene which normally inhibits it except in the presence of the appropriate humoral inhibitor antagonist (Figure 2). The information sequence is translated onto messenger RNA, a filamentous nucleoprotein which with the aid of the ribosome and the specific carrier RNA for each amino acid synthesizes any given protein (Figure 3). Such a complex mechanism holds many opportunities for interruption. Substances interfering in a general way with nucleoprotein by synthesis such as actinomycin D and puromycin are direct cell poisons. Both drugs and intrauterine physiological alterations may have similar ill effects and presumably result in lethal defects. The simpler non-lethal changes

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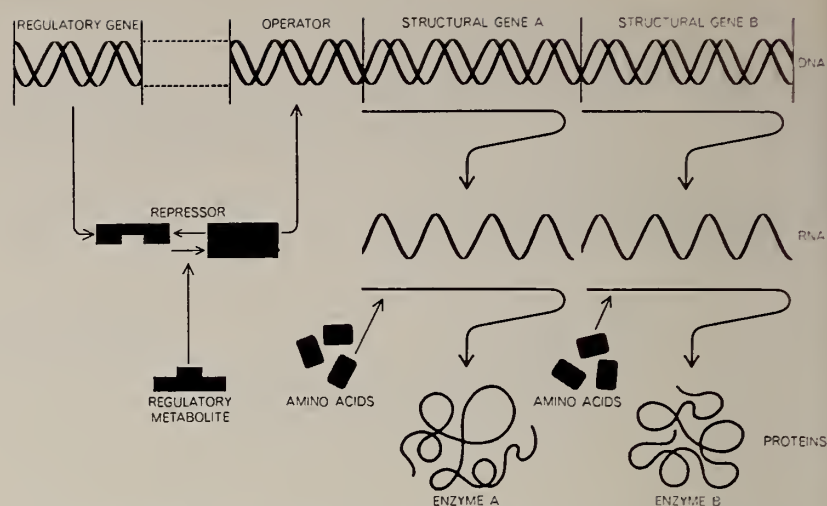
Fig. 1



THE STRUCTURE OF DNA

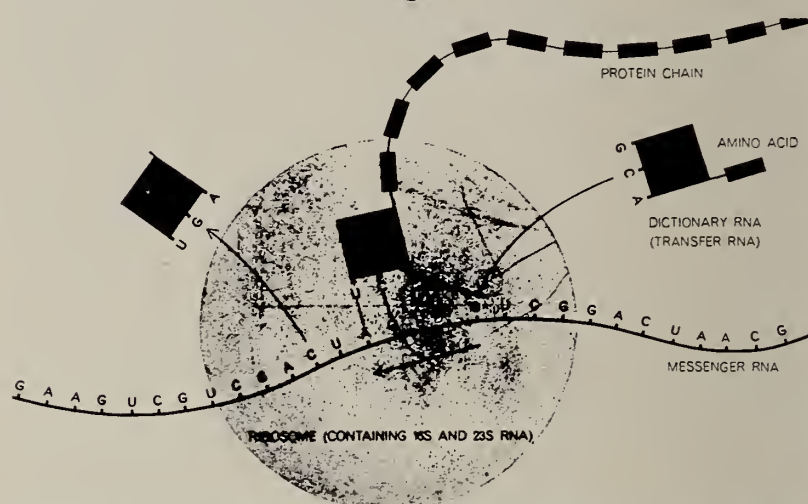
tend to affect single proteins. The studies some years back on hemoglobin S first demonstrated that the simplest and most common change in information is an alteration in base sequence which in turn contributed to a changed or non-sense sequence of amino acids in a given protein. Since the three dimensional structure of a protein is critically related to its function, any change in amino acid sequence may alter function. If this theorem were wholly true, the complex assembly that is man would be inordinately vulnerable to random mutations of base pairs. Not surprisingly, an effective compensating mechanism has now been discovered in the degeneracy of the code which is so organized that

Fig. 2



THE MECHANISM FOR PROTEIN SYNTHESIS AND CONTROL

Fig. 3



PROTEIN SYNTHESIS AT THE RIBOSOME LEVEL

the most probable mutations are to amino acids that are least likely to alter a protein function (Table 1).

From the above synopsis it must be clear that although the primary defect must be in the regulator gene or in transcription of information from the operator gene, the significance and effect may have distant and complex ramifications.

The practical application of these principles has some importance in every day pediatric practice. In particular, there is now an implied obligation to look for this group of diseases where it is appropriate, bearing in mind that they are both rare and varied. There are, for example, over forty different kinds of disorder of amino acid metabolism. Basically, there are two ways to manage this problem. The first is to screen everybody as early in life as is possible and appropriate. This means that cases are early identified and, hopefully, more successfully treated. The economies of this approach are often illusory and there are real dangers that interested lay groups may successfully lobby for compulsory tests that may not always be wise and may be hard to change when new

TABLE I
Codon Assignments for Amino Acids

AAU Asparagine	ACU Threonine	AGU Serine	AUU Isoleucine
AAC Asparagine	ACC Threonine	AGC Serine	AUC Isoleucine
AAG Lysine	ACG Threonine	AGG Arginine	AUG Methionine
AAA Lysine	ACA Threonine	AGA Arginine	AUA Methionine
CAU Histidine	CCU Proline	CGU Arginine	CUU Leucine
CAC Histidine	CCC Proline	CGC Arginine	CUC Leucine
CAG Glutamine	CCG Proline	CGG Arginine	CUG Leucine
CAA Glutamine	CCA Proline	CGA Arginine	CUA Leucine
GAU Aspartic acid	GCU Alanine	CGU Glycine	GUU Valine
GAC Aspartic acid	GCC Alanine	GGC Glycine	GUC Valine
GAG Glutamic acid	GCG Alanine	GGG Glycine	GUG Valine
GAA Glutamic acid	GCA Alanine	GGA Glycine	GUA Valine
UAU Tyrosine	UCU Serine	UGU Cysteine	UUU Phenylalanine
UAC Tyrosine	UCC Serine	UGC Cysteine	UUC Phenylalanine
UAG Terminator	UCG Serine	UGG Tryptophane	UUG Leucine
UAA Terminator	UCA Serine	UGA Tryptophane	UUA Leucine

developments occur. This has certainly been so with phenylketonuria legislation, where however, the compulsory legislation has usually been both wise and informative. The second approach is to actively consider this group of diseases whenever it is clinically appropriate and to ensure adequate laboratory support.

There is a need, therefore, to compromise between screening every child for a maximal range of inborn errors and conserving laboratory and other resources for effective support when most needed. Current opinions on this matter stand briefly as follows: in the newborn period, a number of centers have been combining one dimensional paper chromatography of serum amino acids with the Beutler fluorescent filter paper tests for galactosemia. It is too early yet to say whether the effort has justified the results since not enough tests have been carried out to afford any very accurate idea of the true incidence of this group of diseases in the viable newborn infant. The procedure has, however, brought to light the relatively common condition of transient parahydroxyphenylpyruvic acid oxidase deficiency. The incidence of this as judged by a fasting serum tyrosine of 5 mg/100 ml may run as high as 5% of all births accentuated as it is by prematurity, a high protein intake and vitamin C insufficiency. The degree and duration of this immaturity varies greatly, but in its most pronounced form, serum tyrosine levels in excess of 30 to 40 mg/100 ml may persist for eight weeks. The important question is

whether this finding is of any significance in relation to the intellectual maturation of the infant. Direct evidence is conflicting, but, in general follow up studies and evidence from the syndrome of tyrosinosis where there is a permanent pHPA deficiency, suggest that the effect is not significant. There remains, however, the disquieting observation that loading newborn rats with tyrosine has produced an impairment of myelination that is almost as severe as that produced by phenylalanine. More extensive assembly of data may suggest that a specific ambient tyrosine level over a certain critical period may adversely affect myelination in the newborn human infant. Meantime, it seems appropriate to screen all premature infants for hypertyrosinemia in the second week of life and to ensure adequate vitamin C supplement and transient lowering of protein intake as long as tyrosine levels exceed 15 mg/100 ml, even though the condition seldom persists beyond the second week. Treatment, in any case, is nearly always promptly effective.

The present position with regard to routine screening of the newborn is that it must be considered good practice to look for hyperphenylalaninemia, but for the time being, wider searches for homocystinuria, galactosemia and other inborn errors of amino acid metabolism are presently best confined to investigational centers. This extended range of readily available laboratory tests should nevertheless, be applied in institutions for the retarded, in chil-

dren with severe emotional or psychotic illness and in any severe unexplained illness as an infant, and in infants who 'fail to thrive'. A tentative full spectrum of screening tests might include one dimensional paper chromatography of serum and urine for an abnormal amino acid pattern, the fluorescent filter paper test for galactosemia, a cyanide-nitroprusside test on urine for cystine and homocystine, a precipitation test for gargoylism and a copper oxidase assay for Wilson's disease, with perhaps serum uric acid levels as well.

Motivation to search for inborn errors on the part of a clinician is predominantly the possibility of therapy rather than as a public health measure. In consideration of this, the treatable conditions will be briefly reviewed. These fall under three main headings, namely those in which the biochemical aberration can be modified by some dietary manipulation, those in whom some pharmacological intervention is needed, and a miscellaneous group where more fundamental attempts at bio-engineering have to be considered.

Specific dietary modification as an approach to the therapy of inborn errors has a number of separate objectives. One is simply to restrict substrate as, for example, protein in isovaleric acidemia or phenylalanine in phenylalaninemia. The second is to provide a poorly synthesized product, e.g. uridine in orotic aciduria, the third is to enhance impaired reaction by the provision of cofactor, such as by vitamin B₆ in pyridoxine dependency. Finally, there are possibilities for gene product replacement as occurs with AHG infusion in hemophilia.

A rather specially interesting further example of the first category is provided by a group of diseases in which there is a metabolic block in the Krebs-Henseleit cycle for the conversion of ammonia to urea. Biochemically, this is rewarding for a syndrome has already been identified that is associated with a block in each enzyme of the cycle. It illustrates the point that practically every known enzyme will sooner or later be associated with some syndrome of its own. The group includes argininosuccinic aciduria, citrullinemia, carbamyl synthetase deficiency, and hyperlysinemic inhibition of arginase.

These cases present early in infancy with episodes of vomiting and coma accompanied by a variety of neurological signs. When treated by rehydration, they improve only to deteriorate when conventional feeding is resumed. Reports are few, but there is evidence that on milk formula containing normal calories, but only

up to 1.5 g/Kg/24 hours of protein, satisfactory intellectual and physical progress can take place. A more complex approach to substrate restriction is provided by maple syrup urine disease. The need here is to restrict the intake of leucine, isoleucine and valine, to the amounts required for protein synthesis. This is accomplished by giving calories in the form of a corn oil and sucrose emulsions fortified with minimal amounts of skim milk and gelatin and the remainder of the nitrogen as synthetic amino acids. The practicality of therapy for these children has been greatly improved by the availability of a vacuum spray dried corn oil: dextrimaltose powder which can be premixed in a dried form with minerals, vitamins and amino acids.

Dietary management of substrate levels nevertheless remain cumbersome and difficult to regulate. It is, however, effective where accrued substrate is itself toxic. More general dietary measures may also help, as, for example with high water intake in cystinuria.

A less physiological extension of dietary therapy is the use of a drug such as calcium carbimide in oxalosis and copper chelates in Wilson's disease. It is possible that one day biochemical adjustments will be contrived to restore a more normal geometry to an altered enzyme and that greater use may be made of enzyme induction and repression. There are indications too, that streptomycin can, in certain strains of *E. coli*, restore normal information in a nonsense mutant for arginine metabolism. None of these approaches has yet developed to a point at which any human experiments could be begun. One possibility is the introduction of semipermeable micro-corpuscles into the blood stream saturated with enzyme. The obvious difficulty is that, whereas it makes the enzyme activity available within the plasma space, it does not overcome the problem of intracellular migration. Finally, there is some promise that organ transplantation in conditions such as Gaucher's disease and vascular diversions as in glycogen storage disease may become increasingly effective as therapy.

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Path CAP sule

Submitted by the College of American Pathology in connection with the South Dakota Society of Pathologists.

ANTIBIOTIC SENSITIVITY TESTING

Antibiotic sensitivity testing is a wide-spread practice, and when properly performed by knowledgeable and experienced laboratory personnel, it can be of marked significance to the physician in determining the therapeutic course to follow in an infectious process. Two methods of testing are currently used. In each of these methods the pathogenic organism must be isolated and identified from the specimen submitted to the laboratory.

The disc sensitivity test is a method wherein commercially produced filter paper discs containing a known level of antibiotic are placed on the surface of an agar plate that previously has been seeded with the organism under test. After overnight incubation, zones of bacterial inhibition are seen around the discs containing those antibiotics to which the organism is sensitive. Discs containing antibiotics to which the organism is resistant will not inhibit growth. Reports to the physician of the results of this type of testing should be as uncomplicated as possible, indicating that the organism is either sensitive or resistant to the antibiotic. On the basis of the disc sensitivity, one cannot infer the degree of bacterial susceptibility or resistance.

The rapid hemoglobin-reduction sensitivity test is a modification of the disc method. Sheep red cells, as well as the organism being tested, are incorporated in the agar. The test results are determined by the appearance or absence of reduced hemoglobin within the red cells around the sensitivity disc—the rationale of the test being that organisms adjacent to the discs containing antibiotics to which they are resistant will continue their metabolic processes and will utilize the available oxygen from the red cells. This oxygen utilization will result in the reduction of red cell hemoglobin and is detected by a darkening of red cells around the disc. Discs that contain antibiotics to which the organism is sensitive, will inhibit bacterial metabolism and the red cells around these discs will retain their bright red color. Since this

test is based on bacterial metabolism and not on visible bacterial growth, the results are available in two to three hours rather than after overnight incubation. The rapid method is most helpful in life-threatening infections such as meningitis and septicemia because the antibiotic sensitivity pattern of the infecting organism is known before the patient's response to any antibacterial therapy is evident.

The tube-dilution method of sensitivity testing is less widely used than the disc method. In this procedure, dilutions of the antibiotic are made in tubes of appropriate growth medium. The tubes are inoculated with the organism under test, and after incubation are inspected for bacterial growth. The results of the tube-dilution method are reported as the least inhibitory concentration of antibiotic. The assumption is, for example, that if 0.5 unit of an antibiotic is inhibitory *in vitro* and if this same blood level of antibiotic is obtainable following a therapeutic dose, the drug's use is indicated.

In comparing the usefulness and reliability of the two methods, it can only be said that the proponents of the tube-dilution method are firm in their convictions that the recommendation of a specific antibiotic can only be made when the inhibitory level of the antibiotic is known and when this level can be obtained or exceeded in the circulation. However, the tube-dilution method is a comparatively expensive test and the number of antibiotics that may be tested is limited since each antibiotic constitutes a different test. The disc method, although less quantitative, affords a relatively inexpensive method of determining the sensitivity pattern of an organism to a number of antibiotics, possibly eight to ten, within the same test.

Empirical evidence from countless tests over a number of years has validated the effectiveness of the disc method. Thus, the disc method of sensitivity testing is reliable when its shortcomings are understood by the laboratory personnel and the physician. The enteric bacteria are notorious for giving false-negative reactions to sensitivity tests to the sulfa derivatives; that is, the test frequently indicates that the drug is ineffective while the patient quickly responds to specific therapy. This happens frequently in urinary tract infections.

Mixed sensitivities: The practice of using the specimen as the inoculum for sensitivity testing has some merit when judiciously applied. This is particularly true for specimens from the throat, naso-pharynx, and infected wounds.

(Continued on Page 76)

THE PHYSICIAN, POLITICS, AND PRESTIGE

Speech presented By G. Robert Bartron, M.D.
Watertown, South Dakota

at

SoDaPac Banquet — Rapid City
June 3, 1967

I would like to talk to you briefly tonight about two things that concern me about our position as physicians and our acceptance in our respective communities and also our local and federal controls that govern our very existence. Strangely enough, these two concerns do not involve the manner in which we practice our chosen profession, but more importantly, the manner in which we are accepted in practicing our profession. Naturally, the first thought that each of us would normally feel is most important is that we strive toward excellence in our profession, however I am willing to accept that this is a foregone conclusion and that this is the ideal effort that we all pay most attention to. Unfortunately, even though we accomplish this objective this is not, in the public opinion, the grounds on which we are evaluated. The two areas that concern me most are the areas of

(1) The present prestige of the physician

(2) The position a physician takes in participating in and helping to direct legislative matters that eventually will reflect and control the manner in which we continue to practice medicine in this country and in this state.

I know of no profession or business that has over the years, occupied the esteem that the practice of medicine has held. Our local controls, our manner of self-policing, our requirements of continuing education, are such that we stand apart. There is no other profession that I know of that sits down frequently and reviews their standards of education, that directs and requires continuing improvements of our knowledge and our practical application of it. The law profession, which has also been long respected, does not have nearly the rigid standards which we follow. It would be unheard of for a group of lawyers to sit down — such as at a staff meeting of a hospital — and review the manner in which their briefs were prepared and the manner in which they were defended or assailed, yet we are required by staff activities and By-laws of our local hospitals to do this on a monthly basis. It would also be unrealistic and improbable that a group of architects and engineers would likewise submit themselves to review of the manner in which architectural

designs were developed . . . load stresses and other technics involved in their scientific designs . . . submitted to the scrutiny of one another on a frequent basis. You can go right on down the line and you can find no other group that evaluates their actions and practices in the manner in which we do. Yet over the past 20 years, irrespective of all of these actions taken by us, our prestige as a profession has fallen from that of the most respected to one often publicly criticized by the press, by our elected officials, by the weekly periodicals, and — probably even more importantly — from amongst members of our own group.

We have digressed from a position of unqualified respect to one of suspicion and concern. Yet during this same period of time the advances in technological improvements, scientific knowledge, the application of revolutionary life-saving procedures have advanced more in these few short years than in the previous history of the profession since its inception. We are now able to replace major organs. Far advanced surgical technics for the correction of heretofore incorrigible and fatal deformities have become commonplace. For example . . . the most recent development in the treatment of acute coronary artery disease has indicated that this commonplace ailment, which is known to every layman, and the mortality associated thereto, can be reduced in the amazing percentage of 50%. In a very short time, I venture to say that there will not be an accredited hospital in the state of S. D. that will not have the facilities to carry out the measures necessary to save many, many lives afflicted with this well-known, household word of HEART ATTACK.

We, in the small state of S. D., in our hospitals, are and will continue to practice medicine in the manner in which only a very few short years ago was not available even to the most highly technical and University-associated centers throughout the U. S. The average physician today will be equipped with the knowledge and capability of carrying out treatment which heretofore was necessarily restricted to the most highly-trained specialists in the large centers.

I think and sincerely believe that the advances that have been made in medicine are equal to any of the advances made in any other profession . . . (and I would unqualifiedly compare these to the advances in aero-space medicine and aero-space engineering). Yet, despite all these advances, we find ourselves not in a position of improving our status of re-

spect and esteem, but in a position of concern, and in some instances even degradation.

What has happened to our profession — and through it, to us? I think this can be best summed up by simply saying that the physician/patient relationship has had a continual and growing deterioration. The classic example of the physician sitting at the bedside holding the hand of a seriously ill patient over a period of many hours no longer exists, and I grant that it is not necessary. We must remember that that patient so seriously ill had the complete confidence that the physician, even though he had none of the spectacular remedies in our present armamentarium, nevertheless directed his total attention to the welfare of his patient. Today, medicine has become aloof and impersonal. It is fast becoming a commodity that can be bought and used without personal identification. Perhaps one of the more important contributors to this impression is the physician himself. Too often the physician, because of his busy schedule, has lost sight of the personal relationship that previously existed with the patient and his doctor.

Strangely enough, because of the advantages of the new technics and skills available to us, we should be in a much better position to maintain our respect, but again, unfortunately, this has not occurred. We have lost sight of the fears, desires and wants of the lay persons and how they become interpolated in a final impression of their personal physician.

The position of a family physician no longer interests the young man going into medicine. Because of our over-specialization the young doctor completing his medical training has been indoctrinated into seeking a limited specialty, or a specialty type of practice, and becomes dependent upon referrals rather than ability, and desire to improve and increase his practice.

In the face of all these things, it appears to me that the time has come when we as physicians must reassess our position and our relationship with the lay people whom we administer to. We must take a careful reevaluation of our interpersonal relationship and try to convey our interest and concern to our patients on a more personal basis, rather than a number or an unnamed individual on an assembly line production basis.

We have had the advantages of improving our profession more than any other, yet we have lost sight of the most important facet of gaining respect and consideration for the many, many

improvements and the manner in which we administer them.

The second thing that concerns me is one of the physicians' participation not only in community life but equally as important in the medical/political and socio-economic aspect of our community life. The crying complaint in any community activity is that the physicians, as a profession, are the last to participate and most hesitant to contribute not only of their money but of their time. This, obviously, can lead to only one conclusion in the eyes of the public. Under our great free-enterprise system and the right of free choice of a personal physician, we must continually strive to improve our image. Yet all too often the aura that is attached to the physician is that he is money-mad, inconsiderate, and uncooperative . . . and this impression within the community must be reversed.

In our system, which is like no other country remaining in this world, where when we have attained our formal education we are almost automatically eligible to enjoy one of the highest economic strata in our society, we continue to avoid the responsibility that must necessarily go hand-in-hand with this privilege. It becomes necessary that all of us should take a more active participation in the affairs of our local communities and our local, state and federal government.

Today, when the decisions not only at a federal level but at the last frontier of control, the state level, are being made, it may very soon hamstring us and confine us to a way of practice which precludes our own individual control. It becomes absolutely essential that we cast aside our objections to the disagreeable aspects of participating in legislative matters and become actively involved in them. Today it is no longer sufficient to adopt a principle and contribute money to this principle. It is imperative that we now actively participate in these matters.

It becomes apparent, with the federal programs and with the state direction and implementation of these programs, that unless we are in a position of some authority in the decisions of the direction of these programs that these programs will then not only be administered and directed by lay people but the philosophy of these programs will be controlled by lay people. It seems unreasonable to me that we in the state of S. D., having one of the best organized associations of any profession, have at the present only one or two of our members who is

on the inside of our legislature in a position to carry out some direction to the benefit of our profession. There is not another business or profession that is so poorly represented . . . the farmers, ranchers, lawyers, druggists, podiatrists, business men . . . and right on down the line, are in a much better position to protect their interests than we in the medical profession, and yet, recognizing this and the devastating effect lack of representation faces, we continue to be complacent and perhaps willing to continue on in the same manner we have previously.

I say to you tonight that we are inviting the loss of control of the practice of free medicine and furthermore are most probably inviting its control to a third party, and that third party may well be someone out of the profession. Unfortunately, this is not only true locally but remains as true nationally. The time has come for the man of medicine to cast aside the fears of public reprisal in his attempt to gain political office and use the skills and influence that are available to him above any other business man or profession to successfully gain political office and participate in the direction of the welfare of his profession. This is a job that cannot be done by lobbyists using non-professional people to influence non-professional people to make decisions on professional problems — and those professional problems being the ones that ultimately govern the manner in which we expect our profession to survive.

Today in S. Dak. we will soon be faced with the necessity of establishing a comprehensive medical care program. Unless we are well represented by numbers and knowledge — both legislatively as well as in an advisory capacity — our comprehensive care program (which to me represents even a more serious threat than governmental subsidy of the cost of medical care) will escape not only our influence but our control and direction, and again we will be at the mercy of lay people with divergent interests other than those that we have.

I hope that the tone of my remarks has not been too morbid, and I sincerely hope that you do not feel I have attempted to use a scare technic, but I sincerely believe that unless we, here and now, change our approach to these problems, the concerns that I have mentioned may come to pass. Our profession has risen to many challenges over the years, and I am confident that we will again, but it will require an awareness and a willingness to change our for-

mat, and—most important of all—an individual effort to participate and to help.

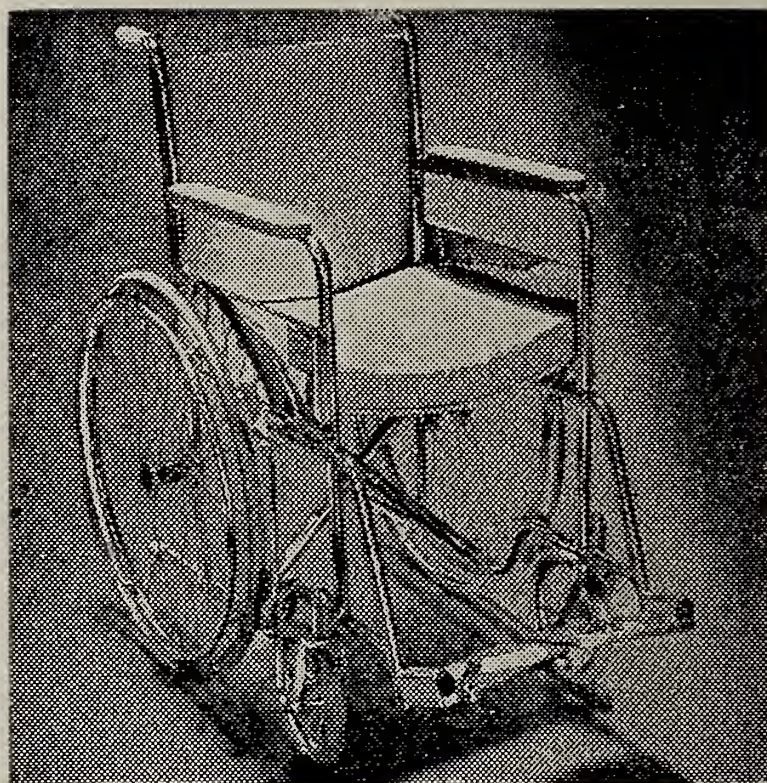
Thank you for the privilege of being here this evening.

G. R. Bartron, M.D.

The bi-monthly medical magazine, "**Ca - A Cancer for Clinicians**," is sent to physicians and medical students by the American Cancer Society. Doctors: to receive this journal, contact your local ACS office.

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ECONOMICS



"GENERIC" — FOR OR AGAINST

During the past several months, volumes of information and misinformation have appeared in the press concerning prescription drugs — brand name vs. generic drugs.

Numerous bills dealing with the subject have been introduced in Congress which offer various approaches to the solutions of problems dealing with drug potency, drug cost, drug advertising, drug research, and drug safety for the consumer.

Lengthy hearings have been held in Washington; charges and counter-charges have been freely made by individuals holding opposing views.

The following are digests of the two bills now receiving the most attention in Washington, Senate Bill 2299 and Senate Bill 17. All physicians should be aware of the provisions of these bills inasmuch as the passage of the bills would definitely affect the practice of medicine and the prescribing of drugs.

DIGEST OF PRINCIPAL PROVISIONS OF S. 17, 90th CONGRESS

This bill was introduced by Senator Montoya (N. Mex.) for himself and was co-sponsored at introduction by twenty-one other Senators.

The bill, if enacted, would:

1. **Amend** part B of Title XVIII to authorize payment for all of "allowable" or if lower, actual expenses of "qualified drugs," subject to a \$25 deductible.
2. **Establish** a Formulary Committee within HEW, comprised of the Surgeon General, the Commissioner of FDA, and the Director of NIH, which would be assisted in carrying out its functions by an advisory group, appointed by the Secretary, whose membership would be required to repre-

sent at least one or more national organizations of physicians, manufacturers of drugs, pharmacists, persons concerned with public health, hospital pharmacists, colleges of medicine, colleges of pharmacy, and consumers.

3. **Require** the Committee to determine which drugs and biologicals would constitute "qualified drugs."
4. **Require** the Formulary Committee to determine, with the Secretary's approval, the "allowable expense" of the various quantities of any qualified drug.
5. **Require** the Committee to publish, at least annually, and disseminate among beneficiaries, physicians, pharmacists and other interested persons, an alphabetical list of qualified drugs by established (generic) name and trade name, together with the allowable expense of various quantities thereof.
6. **Restrict** "qualified drugs" to those requiring a prescription, and certain drugs and biologicals not requiring a prescription if the Committee determines they are of a lifesaving nature.
7. **Authorize** the Committee to provide that an otherwise qualified drug shall not be so regarded when prescribed in unusual quantities.
8. **Require** the Committee to determine allowable expense for any quantity of a qualified drug on the basis of "acquisition cost to the ultimate dispenser (generally, community pharmacists) for the quantities most frequently prescribed plus a reasonable professional fee."
9. **Authorize** the Committee to determine with respect to qualified drugs a schedule of prices for various quantities thereof, but in any case in which a drug or biological is available by established (generic) name and one or more trade names the acquisi-

tion cost of such drug or biological would be deemed to be the lowest cost of such drug of acceptable quality.

10. **Require** the Committee to establish separate schedules of allowable expenses for various regions of the United States which reflect the lowest cost at which acceptable drugs are generally available to ultimate dispensers in those regions.

Major Objections to Bill

1. The bill empowers the Formulary Committee, in compiling the so-called U. S. Formulary, to exclude from it drugs which have been cleared or approved for marketing by the FDA and which have been used by physicians in their practice for many years.
2. Such exclusion restricts the physician in the selection of medicines to be freely available to patients under the Social Security program by imposing a financial liability on the patient if the physician prescribes a drug which is not on the Formulary list.
3. The bill makes Federal beneficiaries second-class citizens in the sense that the drugs available to them are going to be less extensive and quite possibly of less quality, potency and effectiveness, than those available to "private pay" persons unless, of course, the beneficiaries pay for the uncovered drugs themselves.
4. The bill is a price control measure and, in effect, subjects the drug industry to a form of economic regulation unprecedented in federal law.
5. It is not possible for any Formulary Committee, government or otherwise, to make supportable value judgments applicable to all patients regarding the value of one drug over another.
6. The bill would create conflicts within the Department of Health, Education and Welfare by enabling the Formulary Committee to find unacceptable for listing some of the very drugs which the FDA has approved for marketing and use by the American public.
7. The bill would destroy incentive for research and innovative product development since the Formulary Committee could keep FDA-approved new products out of the U. S. Formulary and hence out of use by Social Security and welfare beneficiaries comprising a large part of the total U. S. market.

DIGEST OF PRINCIPAL PROVISIONS OF S. 2299, 90th CONGRESS

This bill was introduced by Long (La.) for himself and for Morse (Ore.), Nelson (Wis.) and Montoya (N. Mexico). It supersedes S. 1303, introduced earlier by Senators Long, Morse and Nelson.

The bill, if enacted, would:

1. **Establish** a Formulary Committee within HEW, comprised of the Commissioner of the FDA, the Surgeon General, the Director of NIH, the Commissioner of Narcotics, and **five** persons not in the employ of the federal government with recognized professional standing in medicine and pharmacy to be appointed by the Secretary of HEW. A majority of the members of the Committee must be physicians, with the chairman to be selected from among the public members.
2. **Require** the Formulary Committee to publish a "Formulary of the U. S." consisting of drugs and biologicals which are included or approved for inclusion in the U. S. Pharmacopeia, the National Formulary, the U. S. Homeopathic Pharmacopeia, or Accepted Dental Remedies. The Committee could include additional drugs of acceptable quality and could exclude from the Formulary drugs or biologicals which the Committee determines to be unnecessary, therapeutically duplicated or of unacceptable quality.
3. **Require** drugs and biologicals included in the Formulary to be listed by the established or generic name.
4. **Authorize** the Committee to include in the Formulary a drug or combination drug product by **trade name** — but only if the product has distinct demonstrated therapeutic characteristics not otherwise available, or if the product is available at a lower cost than a like product available by established name, or if the product sold under a trade name is the only such product of a quality acceptable to the Formulary Committee.
5. **Authorize** the Committee to make tests and establish procedures to determine the propriety of including or excluding in the Formulary any drug or drug product.
6. **Require** the Committee to afford an opportunity for hearing to any person engaged in manufacturing, preparing, propagating, compounding, or processing a drug product prior to making a final decision to exclude

that product from the Formulary, and the final determination by the Committee to exclude a product may be appealed to the courts.

7. **Require** the Secretary of HEW to publish a guide showing the "reasonable cost range" of drugs primarily based on the acquisition price of the drug by established or generic name, and would limit federal reimbursement for drugs furnished under various titles of the Social Security Act to not more than the "reasonable cost range" established by the Secretary plus a "reasonable professional fee" for pharmaceutical services also to be established by the Secretary.
8. **Require** the Secretary of HEW to assign a registration number to producers of drug products. Such registration number would be included on the label of each package containing a drug product for human use.
9. **Provide** expanded inspection and testing authority with respect to drugs by FDA.
10. **Permit** hospitals to be reimbursed for any drug furnished to a patient under its own formulary system, while the community pharmacist can be reimbursed for only those drugs appearing on the U. S. Formulary.

Major Objections to Bill

1. The bill empowers the Formulary Committee, in compiling the so-called U. S. Formulary, to exclude from it drugs which have been cleared or approved for marketing by the FDA and which have been used by physicians in their practice for many years.
2. Such exclusion restricts the physician in the selection of medicines to be freely available to patients under the Social Security program by imposing a financial liability on the patient if the physician prescribes a drug which is not on the Formulary list.
3. Drugs may be excluded from the Formulary if the Committee, in its opinion, finds them to be unnecessary or therapeutically duplicative. This raises the interesting question as to which drugs are duplicative or unnecessary. The one that came first, or later.
4. The bill makes Federal beneficiaries second-class citizens in the sense that the drugs available to them are going to be less

extensive and quite possibly of less quality, potency and effectiveness, than those available to "private pay" persons unless, of course, the beneficiaries pay for the uncovered drugs themselves.

5. The bill discriminates between Federal beneficiaries with the same illness if treated in a hospital or treated at home. The hospital patient is favored. He can receive his medication from among a wider selection, since the hospital is permitted to dispense from its own formulary as contrasted with the community pharmacist who will be restricted to the Federal Formulary.
6. The bill is a price control measure and, in effect, subjects the drug industry to a form of economic regulation unprecedented in federal law.
7. It is not possible for any formulary committee, government or otherwise, to make supportable value judgments applicable to all patients regarding the therapeutic value of one drug over another, as required by S. 2299.
8. This bill involves a number of complex substantive amendments to the Federal Food, Drug and Cosmetic Act, which properly should be considered by the Senate committee on **Labor and Public Welfare**, which has jurisdiction over that subject matter rather than by the Senate Finance Committee.
9. The bill would create conflicts within the Department of Health, Education and Welfare by enabling the Formulary Committee to find unacceptable for listing some of the very drugs which the FDA has approved for marketing and use by the American public.
10. The bill would destroy incentive for research and innovative product development since the Formulary Committee (a) could on the tenuous grounds of "therapeutically duplicative" or unnecessary keep new products out of the U. S. Formulary and hence out of use by Social Security and welfare beneficiaries comprising a large part of the total U. S. market, or (b) would by the wording of the statute put brand name products at a disadvantage in competing with "generic products" by imposing unfair criteria to such products in preparing the Formulary.

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- ☐ 1. Indications and Limitations of Uses of Antibiotics
☐ 2. The Moral and Ethical Aspects of Caring for the
Dying Patient

Wednesday, Nov. 29, 7-8:30 A.M.

- ☐ 3. Management of Cerebrovascular Insufficiency
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COMMENTARY

From

THE UNIVERSITY OF SOUTH DAKOTA SCHOOL OF MEDICINE

Edited by: Dr. Charles R. Gaush, Publications Committee



There appears to be a great deal of controversy in the minds of many people with regard to the propriety of academic research vs. teaching in our state institutions. The following editorial from *Science* (vol. 157, No. 3790, p. 759, 1967) clarifies the issue rather well and we reprint it here with the kind permission of the AAAS.

JUSTIFYING ACADEMIC RESEARCH

As a nation we often behave as if we are not sure that we will survive the next 6 months. Urgent short-term or emotion-laden issues commanding the headlines compete successfully for federal funds, while programs essential to the long-term life of the nation are neglected. In such circumstances, academic scientists must not fail to remind the public of the many enduring benefits to be derived from support of research.

The public is aware that practical applications have arisen from past research and are likely to arise from future research, but scientists would do well to continue to furnish examples of the relation of research and beneficial applications. Another need is to help the public explore the cultural aspects of scientific knowledge. Most humans hunger to understand the universe about them, and many are willing to make considerable efforts to satisfy their curiosity. Thus the museums of the Smithsonian Institution in Washington draw large crowds. The observatory at Mount Palomar is besieged with visitors, and the Christmas science lectures sponsored by the American Association for the Advancement of Science are well attended.

Leadership in the creation of knowledge brings great national prestige. When a conspicuous contribution is recognized with a Nobel prize, a nation's stature increases. The United States has been receiving about half of the Nobel prizes, and most of the winners do their research at universities.

A serious failure of academic scientists has been in educating the public with regard to the role of scholarly inquiry in the universities. The necessity to do so became acute a few years ago. At that time a number of articles in major publications asserted that research efforts by professors were destructive to the teaching functions of universities. Critics neglected to mention that often the most incompetent professors in science departments are those who do no research. The administrations of many colleges and universities quietly responded to the criticisms by making clear to their faculties the importance attached to the teaching function. However, the public is largely unaware of these steps, and an impression remains that good teaching and research are incompatible. This is an incorrect view.

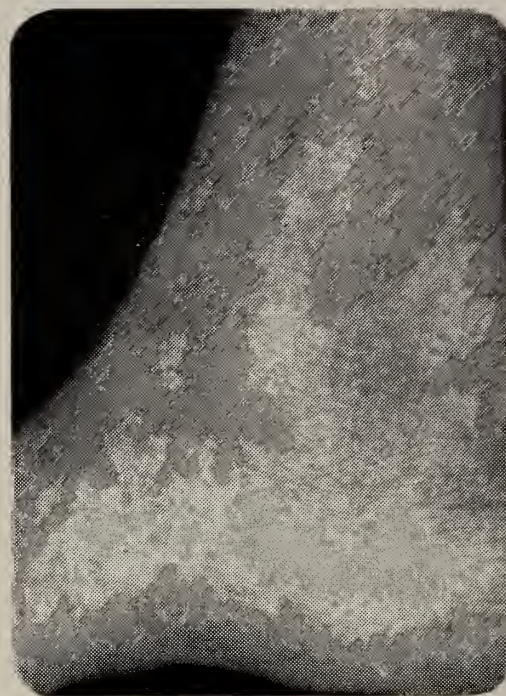
With science evolving rapidly, a major task for professors is to keep up with developments in their field. The full-time instructor who presents material that is out of date defrauds his students in at least three ways: He fails to render proper guidance with respect to subject material, he fails to set high standards of scholarship, and he fails to inspire enthusiasm for learning. To be a good teacher of science, a professor must be intellectually virile. He must be part of the creative enterprise. The most practical means of keeping current with new developments is to participate personally in research activity. The sharply disciplining nature of cold-eyed peer evaluation induces research scientists to work hard at creative endeavor. As part of that effort they try to achieve awareness and understanding of new discoveries in their branch of science. Their students are beneficiaries.

A final role of academic research is in the graduate training of scientists for industry, government, and academia. If good basic research is not conducted in the universities, how will the nation obtain the elite scientists so essential to modern civilization? — P. H. Abelson

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effects are encountered, the drug should be discontinued and appropriate measures taken. Use on infected areas should be attended with caution and observation, bearing in mind the potential spreading of infection and the advisability of discontinuing therapy and/or initiating antibacterial measures. Generalized dermatological conditions may require systemic corticosteroid therapy. Steroid therapy, although responsible for remissions of dermatoses, especially of allergic origin cannot be expected to prevent recurrence. The use over extensive body areas, with or without occlusive non-permeable dressings, may result in systemic absorption. Appropriate precautions should be taken. When occlusive nonpermeable dressings are used, miliaria, folliculitis and pyoderma will sometimes develop. Localized atrophy and striae have been reported with the use of steroids by the occlusive technique. When occlusive nonpermeable dressings are used, the physician should be aware of the hazards of suffocation and flammability. The safety of use on pregnant patients has not been firmly established. Thus, do not use in large amounts or for long periods of time on pregnant patients.

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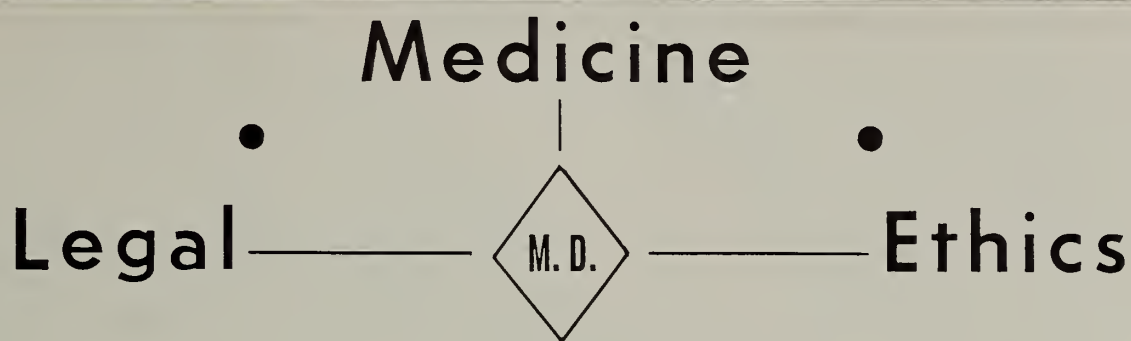
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PHYSICIANS NOT LIABLE FOR FAILURE OF BIRTH CONTROL PILLS

In a suit by a patient who became pregnant and gave birth to a child after taking birth control pills, the patient's appeal from judgment in favor of the two physicians who prescribed the pills was dismissed by the Iowa Supreme Court. The trial court had directed a verdict in favor of the physicians on the grounds that the patient had sustained no physical or mental injuries as a result of the pregnancy and childbirth and that to allow damages for the normal birth of a normal child would be contrary to public policy. The Iowa Supreme Court based its dismissal of the appeal on the fact that the patient had filed a dismissal of appeal in the trial court.

* * *

\$70,000 DAMAGES AWARDED IN "FOREIGN BODY" CASE

In his suit against two surgeons, a patient in whose abdomen a hemostat was left during an operation was awarded damages of \$70,000 by a California trial court jury. The surgeons had performed exploratory surgery on the patient. An X-ray taken a year later, when the patient was under the care of other physicians, disclosed the hemostat's presence in his lower abdomen. Surgery was performed for removal of the hemostat.

* * *

RIGHT TO DEFEND MALPRACTICE SUIT CAN'T BE CUT OFF

In a suit for damages against a dentist by a patient for injuries caused by his allegedly negligent treatment, a trial court did not err in denying the patient's motion for directed verdict at the close of her case, the Court of Ap-

peals of Kentucky ruled. The granting of the motion would have deprived the dentist of the right to present his case. The trial court clearly did not have the power to do that.

* * *

CHARACTER OF THE PHYSICIAN

The prime object of the medical profession is to render service to humanity; reward or financial gain is a subordinate consideration. Whoever chooses this profession assumes the obligation to conduct himself in accord with its ideals. A physician should be "an upright man, instructed in the art of healing." He must keep himself pure in character and be diligent and conscientious in caring for the sick. As was said by Hippocrates, "He should also be modest, sober, patient, prompt to do his whole duty without anxiety; pious without going so far as superstition, conducting himself with propriety in his profession and in all the actions of his life."

* * *

ABILITY OF PATIENT TO PAY

One of the strongest holds of the profession on public approbation and support has been the age-old professional ideal of medical service to all, whether able to pay or not. That ideal is basic in our ethics. The abandonment of that ideal and the adoption of a principle of service only when paid for would be the greatest step toward socialized medicine which the medical profession could take. All our arguments as to better service to the people, freedom of choice of doctors would be as naught if such service were not available to a vast proportion of the people.

* * *

SOCIAL CALLS ON ANOTHER PHYSICIAN'S PATIENT

When a physician makes social calls on another physician's patient he should avoid conversation about the patient's illness.

Information provided by the Law Department of the American Medical Association, 535 N. Dearborn, Chicago 10, Illinois.



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uricemia and gout, bradycardia, drowsiness, skin rashes, hangover, systemic disturbances, weakness, leg cramps, diarrhea, epistaxis, dizziness, urticaria, dry itching skin, nausea, vomiting, palpitation, superficial skin bruises, headache, dehydration, paresthesias, photosensitivity, pancreatitis, jaundice, xanthopsia, thrombocytopenia, leukopenia, agranulocytosis, aplastic anemia, nasal congestion, hypotension, lassitude, loose stools, anorexia, bizarre dreams, peptic ulcer, ulcerative colitis, mental depression. (Ammonium chloride, which may be administered to reverse hypochloremic alkalosis, should not be given to patients with hepatic disease.) **Before prescribing or administering, see package insert.** †Warning: May be habit forming. **Usual Adult Dosage:** Butiserpazide®-25 or Butiserpazide®-50: 1 tablet daily or b.i.d. **References:** 1. Johnson, H. J., Jr.: *Penna. M. J.*: 67:35, 1964. 2. Coodley, E. L.: *Curr. Ther. Res.* 4:460, 1962.

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American Rheumatism Association, 13th Interim Scientific Session. Sheraton-Belvedere Hotel, Baltimore, January 19-20, 1968.

Sponsored by The Arthritis Foundation, meeting will present 50 papers on recent developments in arthritis and rheumatism research.

Information: Exec. Sec., Miss Margaret M. Walsh, 1212 Avenue of the Americas, New York, N. Y., 10036.

American Rheumatism Association, Annual Meeting and Scientific Session, Olympic Hotel, Seattle, June 14-15, 1968.

Sponsored by The Arthritis Foundation. More than 65 papers presented in plenary and concurrent sessions. The Paramedical Section of the Foundation will hold its third annual scientific sessions concurrently on June 15.

Information: Exec. Sec., Miss Margaret M. Walsh, 1212 Avenue of the Americas, New York, N. Y. 10036.

MEETING ANNOUNCEMENT

Society for Cryo-Ophthalmology, Miami Beach, Florida, January 14 to 18, 1968, Statler Hilton Plaza Hotel. The society which was founded to keep ophthalmologists informed of the latest advances in ophthalmic cryosurgery will feature the outstanding cryosurgeons from Europe, South America and the United States. Dr. Jose Barraquer from Bogota, Colombia, President, will speak on keratophakia, and Dr. Giambattista Bietti from Rome, Italy, President-elect, will lead the discussion on retinal detachment. Participating on the subject of retinal detachment will be Drs. Dohrmann Pischel, I. D. Okamura, Harvey Lincoff, David Sudarsky, and others. Leading the discussion on cryo-extraction of cataracts will be Dr. H. Fanta and Dr. Louis Girard. Other subjects to be discussed include the application of cryogenic technics in the therapy of herpetic keratitis, epithelial downgrowth, glaucoma, pterygium, trachoma, vernal conjunctivitis and tumors. Drs. H. Kaufman, M. Martinez and D. Paton will speak on the newly improved freezing methods for preserving the cornea. Registration: \$20.00; \$35.00 after January 12, 1968.

Contact: Dr. John Bellows, Secretary, 30 North Michigan Avenue, Chicago, Illinois 60602.



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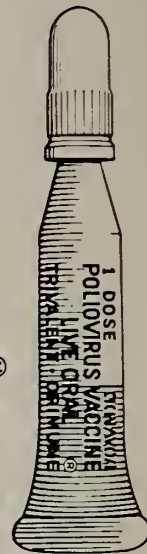
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Live measles and oral poliovirus vaccines should probably be given separately.

SIDE EFFECTS of significance have not been reported. However, the risk of vaccine-induced poliomyelitis, estimated to be from 1:2,500,000 to 1:50,000,000 should be considered.

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A PLEA FOR INDIVIDUALITY

On the front page of a widely circulated South Dakota newspaper (*) there appeared recently a news item originating from the International Congress of Psychiatry, entitled "Depersonalized Society is Foreseen." For the physicians of the World the thoughts presented should be a matter of great concern. Doctors Stanley Less of Columbia University and William Wolf, Secretary of the American Society for the Advancement of Psychotherapy predicted that within the next 50 years society will become depersonalized and desexualized; that a person who tries to be an individual "will be looked upon as odd, reactionary and antigroup." They further predicted that failure to adapt to the "group" is likely to be a prime psychic stress factor in the future. Romantic love as now exists may become altered and interactions between men and women may be changed considerably. "Our future society might be far less sexualized as compared to our current civilization." "Unanimity of thinking would be seen as the normal pattern." One of the main problems of the future will be to find sources of pleasure and pride for the citizens when labor will no longer be the prime motivation for man's existence.

These concepts, although seemingly mundane and academic, should provoke increasing thought and consideration by each physician concerning his status as a member of the healing profession and also as a citizen of the community. Physicians individually and as a group have the reputation for being some of the most individualistic persons in the community. They are taught this attitude in the medical schools; the nature of their every day problems is such

that they must constantly exercise individual judgment in the care of patients. It is true that some portions of the practice of medicine may be put into computers, stored on tapes, and then fed back in the form of tentative diagnoses. Yet, a machine will not be able to feel the tender abdomen of a person with acute appendicitis, make the decision to operate, and then successfully perform the needed surgery. Nor will it be able to give the friendship, compassion, and understanding to a human being in trouble which the physician can and will continue to provide. Because of the increasing likelihood of federalization of medicine with its implied coercion to conformity, the physicians will have to steadfastly maintain individuality of thought and action if there is to be the best possible care of patients.

The originality, resourcefulness and imagination of its people have been some of the greatest factors which have helped make the United States a great nation. Outstanding advances in government, business, and science, have not been fostered by "unanimity of thinking." It is highly unlikely that future progress of this or any other country will be enhanced by an atmosphere where there is the brainwash of total conformity. Today one sees a trend toward conformity (??? non-conformity) of actions by teenagers, hippies, Negro rioters, and other groups which are basically in a search for group and personal identity. Although their actions may conform to patterns, each still maintains an individuality past the time of stress.

It is becoming increasingly apparent to even the casual observer that there are now in progress very dramatic and far reaching changes in the mores of our society, especially those pertaining to matters sexual. Although few would prefer to return to the prudery of the mid-

(*) Sioux Falls Argus Leader, Sioux Falls, South Dakota, Saturday, August 26, 1967, page 1.

Victorian era, the attitude of permissiveness which now prevails has brought with it tremendous problems especially as pertains to marriage and the family. Concomitant with the increase in sexual freedom which now exists, significant advances are being made in the field of controlled parenthood, even to the point of at least partial growth of a human foetus in a test tube. Where the balance will rest is a matter for conjecture.

Because they must continue to make decisions, have initiative, and be free to assess, correlate, and translate into action the results of their investigation, physicians will have to increase their efforts to maintain individuality. To the two dichotomies, the individual person vs. the brain-washed robot, man and woman, one might repeat the French aphorism, *vive la difference* !!! May it always continue to exist.

Signed: J. B. Gregg, M.D.

(Continued from Page 55)

When performed by experienced personnel the sensitivity pattern of a pathogenic organism can be determined from a sensitivity plate containing several unimportant contaminants. Mixed sensitivities can be condoned only in those cases in which the laboratory will repeat the studies on isolated organisms when the first test results are not absolutely clear. Mixed sensitivities are of no value in grossly contaminated specimens such as stool specimens or where overgrowth by a highly motile organism occurs. The rapid hemoglobin-reduction and tube dilution methods are not suitable in determining mixed sensitivities because the result obtained by either of these methods is only the sensitivity pattern of the fastest growing organism in the contaminated specimen and not necessarily that of the pathogen.

In the past few years, numerous antibiotic test kits have been commercially produced to provide sensitivity testing as an office procedure. This type of sensitivity testing has been found to be inaccurate for the following reasons:

1. Overgrowth by contaminating non-pathogenic organisms.
2. Lack of stability of various antibiotics contained in the test kit.
3. Unreliability of the growth medium in the kit. Fastidious pathogenic organisms failed to grow.
4. The test results were not reproducible.

5. There were no means provided to identify the organism whose sensitivity pattern was determined.

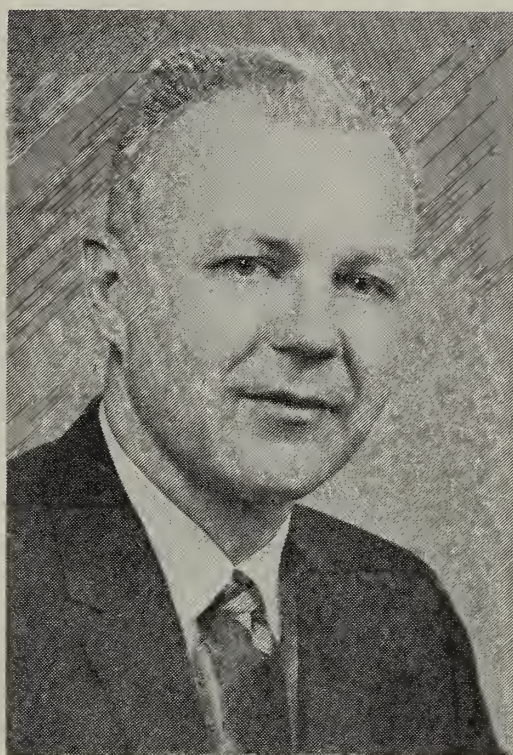
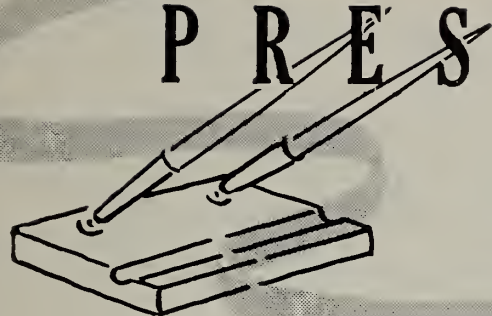
It is fortunate for the welfare of the patient that few, if any, of such kits are being used routinely.

(Continued from Page 38)

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The American Cancer Society supports professional education through Clinical Fellowships. There are two types of Fellowships — Clinical and Advanced Clinical — for qualified medical personnel and institutions. For further information on these Fellowships, call your local ACS office.

P R E S I D E N T ' S P A G E



Greetings:

Title XIX is again making the headlines about the country. The California program has been in operation for less than a year and is already anticipating a \$300,000,000 deficit unless services are trimmed and restrictions imposed.

The Title XIX program contains many features which the medical profession has proposed and actively supported. The program provides for matching of Federal and state funds with the state retaining a good measure of control over the use of the funds. The program is directed at those who can demonstrate a need for help in securing medical care. Funding is from general revenue sources instead of from Social Security taxes.

If the Title XIX program is implemented in stages, and if good judgment and reason is used in defining eligibility, the program is one that we can and should support. Our South Dakota Title XIX program became operative on October 1. Blue Shield has been named the fiscal agent for the South Dakota Title XIX program and will handle the processing of all claims. The contract with the State Welfare Department includes provision for payment of physicians on the basis of usual and customary charges. It also contains a provision which guarantees freedom of choice of physician and hospital for Title XIX recipients.

This program represents at once a challenge and an opportunity for the medical profession. We must be willing to police ourselves and to insure that the usual and customary concept is not perverted or distorted beyond recognition.

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Medicines for the Troubled Mind 6
How Does the Price of Medicine Compare with Other Prices? 8

Reprinted from the November, 1967 issue
of The Reader's Digest

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News Notes • Changes • Births • News

Pop's Proverb

Kipling said, ". . . your
sins . . . by two . . .
You pay for one by one";
But who would sin by
twos, indeed,
And lose the joy and fun
Of remembering each and
every sin
For its peculiar treasure?
I think I'll gladly pay for
each
And have for each the
pleasure.

Clark Johnson, M.D., Yankton, announced recently that plans are underway for the organization of a "Bartron for Governor Club," in Yankton.

* * *

The new president-elect of the American Academy of General Practice is Dr. Maynard I. Shapiro of Chicago, Ill. Dr. Shapiro, who has been vice president this past year, defeated Dr. Edward Kowalewski of Akron, Pa., the current chairman of the Board of Directors.

Dr. Elmer M. Smith of Des Moines, Ia., was elected vice president by acclamation.

Dr. Roman Auskaps was recently honored at a "Dr. Auskaps Day," in Lake Norden.

* * *

Both Northwestern University and the University of Kansas Medical Schools are each sending one medical student to complete a three month Preceptor Program with **Robert E. Van Demark, M.D.,** Sioux Falls.

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IS NEEDED**

James Jackson, M.D., Yankton, recently addressed the Yankton Federated Woman's Club. Dr. Jackson discussed the general aspects of orthopedic surgery.

* * *

Henry Davidson, M.D., Sioux Falls, has recently joined the professional staff at the Veterans Administration Hospital in Fort Meade. Dr. Davidson had previously been in private practice in Lead for twenty-four years and in Sioux Falls for five years.

* * *

John Freeman, M.D., has joined **Drs. Hagin and DeGeest** at the Hand County Clinic, in Miller. Dr. Freeman has just returned from a month long medical project in Costa Rica.

* * *

Alan K. Brevik, M.D., Watertown, has announced his candidacy for the presidency of the South Dakota Young Republican Federation.

* * *

Louis Karlen, M.D., Madison, addressed the local Kiwanis Club regarding smoking and diseases of man associated with heavy smoking.

Robert Hayes, M.D., addressed the South Dakota Nursing Home Association regarding the proposed "South Dakota Regional Medical Program." During the same convention **John Elston, M.D.**, Rapid City, was included on a panel discussing South Dakota Title XIX Program.

* * *

Joseph P. Sejvar, M.D., has been renamed to the medical staff of the Homestake Hospital according to **A. M. Semones, M.D.**, Medical Director.

* * *

Tacettin Turedi, M.D., has established a practice in Herreid, South Dakota, in partnership with **Dr. Bedrettin Gunc**. Dr. Turedi is a native of Turkey.

* * *

W. A. Stephens, M.D., recently moved his office from Custer to Murdo, South Dakota. Dr. Stephens will maintain a general practice in Murdo.

* * *

Clifford Lardinois, M.D., Huron Pathologist, is in charge of solicitations in the professional division of the Huron United Fund Campaign.

Chris J. Moller, M.D., Dell Rapids has volunteered for a sixty-day tour of duty in Vietnam. The "Volunteer Physicians for Vietnam" program is administered by the American Medical Association.

* * *

Walter Kitzler, M.D., recently moved his office to Gettysburg. Dr. Kitzler has previously practiced in Faulkton and Ipswich.

* * *

David Rousseau, M.D., joined the Brown Clinic, Watertown, as a General Practitioner. **David Rousseau, M.D.** is the son of **M. C. Rousseau, M.D.**, who has been in practice with the Brown Clinic since 1938.

* * *

Dr. C. V. Auld, Plankinton, received his sixty year palm from the Masonic Lodge at Plankinton. The palm recognizes sixty years' membership in the Blue Lodge.

* * *

Dr. McCann, Parkston, who recently returned from serving in Vietnam spoke at a meeting of The Methodist Young Adults in White Lake.

John Gregg, M.D., Sioux Falls, is leaving for a three month study course in Washington, D. C. Dr. Gregg will be studying at the Armed Forces Institute of Pathology, specializing in ear Pathology.

* * *

The Huron District Medical Society met at the Inn on September 14, with twenty-five members and wives present for the official visitation of **President John Stransky, M.D.**

* * *

Robert Hayes, M.D., Vermillion, addressed the Catholic Hospital Association regarding the proposed Dakota Regional Medical Program of the University of South Dakota.

* * *

Edward Huppler, M.D., Watertown was elected president of the American Cancer Society, South Dakota Division.

* * *

Joltan Viragh, M.D., Chief of Staff, Veterans Administration Center, Hot Springs, left for Europe to attend the Medical Conference of the International Union Against Tuberculosis.

STATEMENT OF OWNERSHIP

November 15, 1967

The **South Dakota Journal of Medicine** is published monthly at Sioux Falls, South Dakota, in the headquarters of the publisher. **R. E. Van Demark, M.D.**, 1701 South Minnesota Avenue, Sioux Falls, is the Editor and the South Dakota State Medical Association, 711 North Lake Avenue, Sioux Falls, is the Publisher. The Publication is owned by the South Dakota State Medical Association, a corporation. There are no bondholders, mortgagees, or other security holders.

Signed: **R. E. Van Demark, M.D.**
Editor



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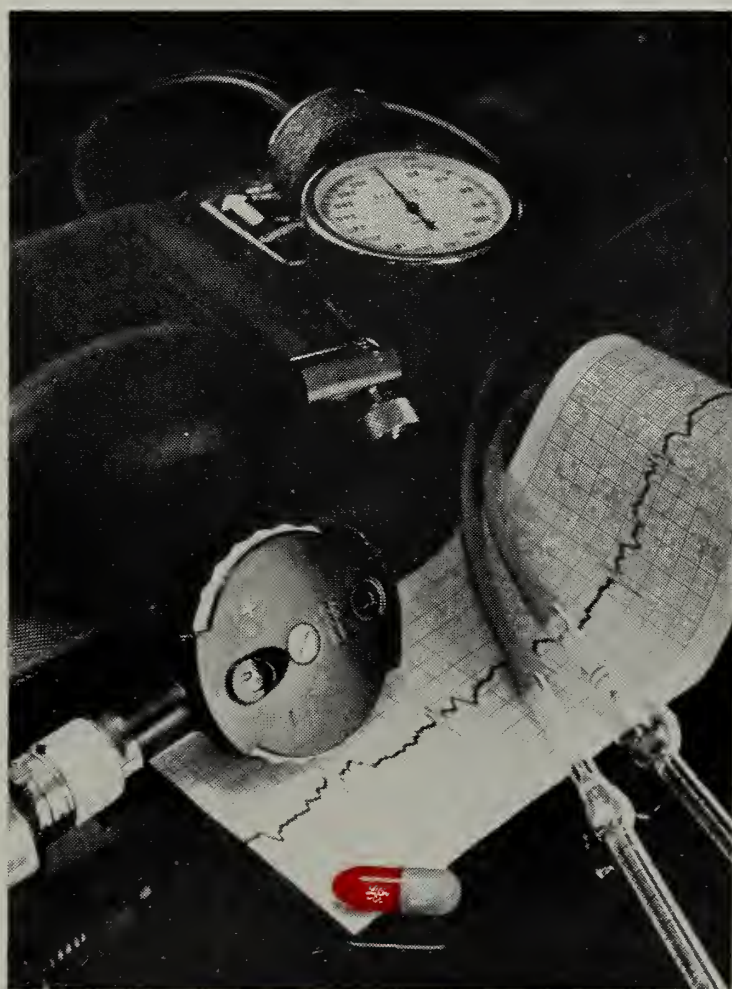
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OF

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JOURNAL OF THE SOUTH DAKOTA STATE MEDICAL ASSOCIATION
AND THE SIOUX VALLEY MEDICAL ASSOCIATION

Volume XX

December, 1967

Number 12

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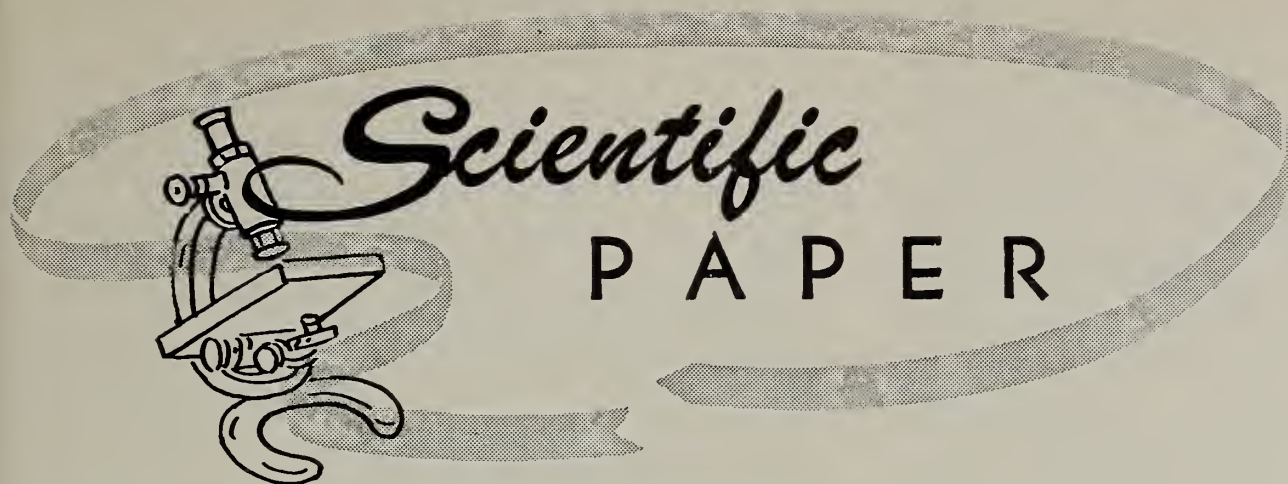
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SOUTH DAKOTA PRENATAL CARE STUDY

No. 1. Introduction and General Statistics
Brooks Ranney, M.D.*

Introduction:

During the first half of the twentieth century we have learned that a major factor in the reduction and approximate elimination of maternal deaths is the early, knowledgeable, and meticulous **prenatal care** of all obstetric patients. This specific aspect of preventive medicine, initiated and developed primarily by American obstetricians, and taught to all medical students, has contributed immeasurably, not only to the **lives** of child-bearing women, but also to their **present** and **future** health.

During recent decades evidence has accumulated that **proper prenatal care**, (as well as pre-conceptional gynecologic care and proper obstetric care during labor, delivery, and those crucial minutes after birth) — all have a profound effect upon **perinatal life** and **health** of the next generation. When this type of gynecologic-obstetric care is sought by patients, and provided by doctors, results — in terms of healthy babies — are measurably better than when little or no such care is received by mothers.

Since a preponderant majority of modern American doctors, who care for women, have

been taught, and understand the elements of **proper prenatal care**, it may be reasonably assumed that this care is **available**, presently, **to all women who seek it**, except, probably, in some great cities, where transient and exploding populations include large segments of medically indigent individuals. Particularly with the recent reduction in birth rates it may be safely assumed that there are enough experienced doctors in South Dakota to provide prenatal care **for all women who seek it**.

Therefore, the primary purposes of this study are to learn what South Dakota mothers know about the importance of prenatal care, to ascertain when, during pregnancy, such care is sought, and if possible, to correlate these findings with obstetric and perinatal results and with educational background of the mothers.

Methods of Survey and Acknowledgments:

Technical questionnaires, even when simplified, contain words which may be poorly understood by some answerers. The percentage return on any questionnaire is usually low, unless second or third mailings are used. For these reasons, in consultation with members of the South Dakota Society of Obstetricians and Gynecologists, the following procedures were established:

Table 1

Year	Live Births not in Hospitals	Live Births in Hospitals	Total Live Births
1960	?	?	about 18,000
1963	?	?	16,646
1964	144	15,411	15,555
1965	129	13,324	13,453
1966	?		12,124

* Chairman, Department of Obstetrics and Gynecology, University of South Dakota School of Medicine; The Yankton Clinic, Yankton, South Dakota. (Note: This is part of a study which was accomplished in cooperation with the South Dakota Society of Obstetricians and Gynecologists, the Obstetrics Departments of South Dakota hospitals, the University of South Dakota School of Medicine, and The Yankton Clinic; and which benefited from the invaluable assistance of Dr. Neil Palmer, from the Department of Sociology and the Computer Center at the University of South Dakota.) Numbers 2 and 3 to follow in January; Number 4 in February.

Since more than 99% of all babies born in South Dakota are delivered in hospitals (Table #1) the South Dakota Prenatal Care Study sheets would be sent to every supervisor of a hospital obstetric department in South Dakota. She and/or her knowledgeable representative would hand a questionnaire to every delivered mother, assist the mother with technical questions concerning type of delivery, etc., receive the completed questionnaire from the mother before she left the hospital, and return the accumulated sheets to the author at the end of each month. With these basic principles established, the South Dakota Society of Obstetricians and Gynecologists voted unanimously to pay for the printing of the 15,000 questionnaires, necessary (with inevitable wastage) to obtain an entire year's information from South Dakota mothers.

In consultation with members of the South Dakota Society of Obstetricians and Gynecologists, the basic medical questions were developed. Thereafter, in consultation with Dr. Neil Palmer, Professor of Sociology and Director of the Computer Center at the University of South Dakota, certain correlated questions concerning educational background, etc., were added; and the entire SOUTH DAKOTA PRE-NATAL CARE STUDY sheet was set up so that it would be easily subject to computer processing. (See addendum #1)

Through repeated correspondence, the author obtained the kind cooperation of 55 hospitals in South Dakota (including all large hospitals, and all U. S. Public Health Service and Air Base hospitals). Questionnaires were mailed and periodic notices and explanations were sent to each respective obstetric supervisor. The Yankton Clinic absorbed these clerical, mimeographing, and postage expenses.

Completed questionnaires were accumulated by respective obstetric supervisors (whose knowledge and time contributed so much to the accuracy of this study) and were mailed in monthly groups to the author. Respective hospitals absorbed the cost of returning the questionnaires. A list of the hospitals, obstetric supervisors, and others who cooperated in the accurate recording, accumulation, and return mailing of the questionnaires is appended to this article (addendum #2).

Because interpretation of obstetric complications, listed on the questionnaires, required too much obstetric knowledge for the data processor to code them accurately (addendum #1,

questions 5 and 6), these portions of each questionnaire were hand-coded in red ink by the author. The data were then punched on IBM cards by the data processor (whose salary was paid from the general research funds of the University of South Dakota School of Medicine).

Then Dr. Neil Palmer and the author consulted concerning which tabulations and cross-tabulations of the data would be necessary to obtain the desired information. (This survey would not have been so thorough without the knowledge and judgment of Dr. Neil Palmer, and the use of the IBM data processing equipment at the University of South Dakota.)

Results:

Data were accumulated during the twelve-month interval, July 1, 1965 through June 30, 1966 (with some minor variations from certain hospitals). During this interval there were about 12,350 hospital deliveries in South Dakota. We received 10,523 completed questionnaires; these constitute about 85% of all hospital deliveries in South Dakota during this time. Occasionally, some questions were not answered, or were incompletely answered, so specific subject totals will not always reflect the totals of questionnaires processed. However, because the sampling is so large, **percentages** should be representative of the true situation, and would not likely be significantly modified by addition of the 1,827 South Dakota mothers, who were not included in this survey, primarily because eight hospitals chose not to assume the burden of obtaining, completing, and returning the forms.

Table #2
Prenatal Care

Initial visit to doctor for prenatal care during first trimester	67.58%
Initial visit to doctor for prenatal care during second trimester	25.33%
Initial visit to doctor for prenatal care during third trimester	4.88%
No prenatal care	2.21%

Table #2 shows that two-thirds of the mothers sought prenatal care, starting during the first trimester of this pregnancy. Another fourth sought prenatal care, starting during the second trimester. However, 4.88% of mothers waited until the third trimester before going to their doctors, and 2.21% sought **no** obstetric care at all before labor and delivery. Certainly this 7.09% of mothers did not receive thorough prenatal care, because they did not see their doctors early enough, or at all.

Table #3
Number of Prenatal Visits

1 through 5 prenatal visits to doctor	16.17%
6 through 10 prenatal visits to doctor	46.41%
11 through 15 prenatal visits to doctor	27.45%
16 through 30 prenatal visits to doctor	3.71%
31 through 64 prenatal visits to doctor	0.12%

Table #3 shows that one-sixth of the patients only saw their doctor one through five times during the pregnancy. Almost one-half made six through ten prenatal visits; more than one-fourth, eleven through fifteen prenatal visits.

The average, uncomplicated pregnant patient seeking prenatal care in the second month will return each month for the first seven months, every two weeks during the eighth month, and each week the last month — totaling about a dozen visits; with complications, more prenatal visits are often required. Considering this, it is evident that **only about one-third** of the mothers had the **average**, normal **number** of **prenatal visits**, or more. Half (some of whom started prenatal care later during pregnancy) had almost the average number of prenatal visits. About **one-fifth** of the mothers had **few** prenatal visits — five, or less — (Table #3), or **no** prenatal care at all (Table #2).

Table #4
Postpartum Check-up

This was first pregnancy	12.07%
Those with prior children	
always return for postpartum checkup	63.63%
sometimes return for postpartum checkup	04.96%
never return for postpartum checkup	02.28%
Do not plan to return for postpartum checkup this time	01.42%
No answer	17.06%

Postpartum check-ups are important to feminine health. Among those mothers with prior deliveries two-thirds reported that they **always** return to their doctors for postpartum examinations and treatment; 4.96% **sometimes** do. However, 2.28% **never** have had postpartum check-ups; and 1.42% reported that they did **not** plan to do so this time. The doctor could not provide thorough obstetric care for these latter patients.

Comment:

In general one may observe that South Dakota doctors are providing adequate prenatal care office visits for the majority of mothers who seek care early during pregnancy, and reasonably satisfactory prenatal care visits for the minority of mothers who seek care some-

what later. A smaller minority do not seek prenatal care at all. These latter two groups, constituting at least 7.09% of South Dakota mothers, **should be educated**, by the **medical profession**, concerning the importance of obtaining early and regular prenatal care, **before** any complications arise, in order to anticipate and prevent severe complications and their sequelae.

Note:

Certain items in the South Dakota Prenatal Care Study show significant trends among the cross-tabulations of data. It is anticipated that each of these specific items will be discussed in separate articles, to be published subsequently in this Medical Journal.

Addendum #1

SOUTH DAKOTA
PRENATAL CARE STUDY

The Department of Obstetrics and Gynecology of the University of South Dakota School of Medicine, in cooperation with the South Dakota Society of Obstetrics and Gynecology, is making a study of obstetric prenatal care for ALL SOUTH DAKOTA MOTHERS. It would be greatly appreciated if you would take a few minutes to complete this questionnaire. The results of this study may be very helpful to future mothers.

In most cases you only need to place an X in the box next to the answer that best fits your situation. Your answers will be most helpful if you will make them as accurate as possible. If you need any assistance, please consult your Obstetric Nurse Supervisor. Also, when you have completed the questionnaire, return it to the Obstetric Nurse Supervisor, who will send it along with others to us.

Thank you for your cooperation.
(This questionnaire is to be completed by each mother before she leaves the hospital.)

1. Not counting any miscarriages, which pregnancy is this for you?

☐ 1. first ☐ 4. fourth

☐ 2. second ☐ 5. fifth

☐ 3. third ☐ 6. sixth or more
2. Have you had any miscarriages?

☐ 1. yes ☐ 2. no

If yes, how many miscarriages have you had?

☐ 1. one ☐ 2. two ☐ 3. three or more
3. During this pregnancy, but BEFORE the time your baby was born, did you go to the doctor for PRENATAL CARE and EXAMINATIONS?

☐ 1. yes ☐ 2. no

If yes, during which month of this pregnancy did you FIRST go to your doctor?

☐ 1. first month ☐ 6. sixth month

☐ 2. second month ☐ 7. seventh month

☐ 3. third month ☐ 8. eighth month

☐ 4. fourth month ☐ 9. ninth month

☐ 5. fifth month

How many visits did you make to your doctor during this pregnancy? (Give the exact number if you can).

_____ visits
4. About HOW MANY POUNDS of weight would you say you gained during this pregnancy (from just before the pregnancy began until just before the baby was born)?

_____ pounds
5. Did you have any special problem or complication during this pregnancy?

☐ 1. yes ☐ 2. no

If yes, please answer the following questions for each special problem or complication you had:

Name or describe briefly the problem or complication

Was this treated by your doctor?

If treated, during which months of your pregnancy? (circle)

<input type="checkbox"/> yes	<input type="checkbox"/> no	1 2 3 4 5 6 7 8 9
<input type="checkbox"/> yes	<input type="checkbox"/> no	1 2 3 4 5 6 7 8 9
<input type="checkbox"/> yes	<input type="checkbox"/> no	1 2 3 4 5 6 7 8 9
<input type="checkbox"/> yes	<input type="checkbox"/> no	1 2 3 4 5 6 7 8 9

6. DURING THIS PREGNANCY, but before your labor started, were you ever a patient in the hospital?

☐ 1. yes ☐ 2. no

If yes, how many days altogether were you hospitalized?

----- days

Why were you hospitalized? -----

7. HOW LONG was this LABOR and DELIVERY (that is, from the time that you really knew you were in labor)?

----- hours

8. What kind of delivery did you have? (The second set of answers is used only in case of twins.)

<input type="checkbox"/> 1. normal (no forceps used)	<input type="checkbox"/> 1. normal (no forceps used)
<input type="checkbox"/> 2. normal (forceps used)	<input type="checkbox"/> 2. normal (forceps used)
<input type="checkbox"/> 3. breech	<input type="checkbox"/> 3. breech
<input type="checkbox"/> 4. Cesarean	<input type="checkbox"/> 4. Cesarean

9. From the time of your delivery, how many days will you be staying in the hospital?

<input type="checkbox"/> 1. two days or less	<input type="checkbox"/> 4. five days
<input type="checkbox"/> 2. three days	<input type="checkbox"/> 5. six days
<input type="checkbox"/> 3. four days	<input type="checkbox"/> 6. seven days or more

10. What was your baby's birth weight?

----- pounds ----- ounces

----- pounds ----- ounces (For second baby in case of twins)

11. Did your baby come on time, early, or late?

☐ 1. on time (within two weeks of the doctor's estimated delivery date)
☐ 2. early by ----- (how many?) weeks
☐ 3. late by ----- (how many?) weeks

12. What is the condition of your baby?

☐ 1. alive, healthy, and growing
☐ 2. alive, but not well
☐ 3. alive at birth, but died ----- (how many?) days after delivery
☐ 4. died during labor or delivery
☐ 5. died before labor started, during ----- (which?) month of the pregnancy

Complete following for second baby, in case of twins:

☐ 1. alive, healthy, and growing
☐ 2. alive, but not well
☐ 3. alive at birth, but died ----- (how many?) days after delivery
☐ 4. died during labor or delivery
☐ 5. died before labor started, during ----- (which?) month of the pregnancy

13. Do you expect to see your doctor for regular post-delivery check-up examinations?

☐ 1. yes ☐ 2. no

14. If you have had any previous babies, what has been your practice in regard to going back to your doctor for post-delivery check-up examinations?

☐ 1. I have always gone back for check-up examinations
☐ 2. Sometimes I have gone back for check-up examinations, but not for at least one baby
☐ 3. I have never gone back for check-up examinations
☐ 4. this is my first baby

15. During the past year, up to right now, have you had a VAGINAL or CERVICAL SMEAR (Pap-anicolaou, or "Pap" test) performed by your doctor?

☐ 1. yes ☐ 2. no

If no, have you EVER had this type of "screening smear" to rule out cervical cancer?

☐ 1. yes ☐ 2. no

16. What is your age? (on last birthday)

----- years

17. How many years of schooling have you completed?

☐ 1. 1 to 4 years of elementary school
☐ 2. 5 to 8 years of elementary school
☐ 3. 1 to 3 years of high school
☐ 4. 4 years of high school
☐ 5. 1 to 3 years of college
☐ 6. 4 years of college (Bachelor's degree)
☐ 7. Some graduate work beyond Bachelor's degree
☐ 8. Completed graduate program (Specify degree: -----)
☐ 9. No formal education

18. Which of the following occupational groups comes closest to that of your husband?

☐ 1. Law, real estate, insurance, banking
☐ 2. Ranching, livestock growing, accountancy
☐ 3. Farming, livestock feeding
☐ 4. Small business, merchant, contracting, etc.
☐ 5. Laborer, carpenter, craftsman, union official, repairman, etc.
☐ 6. Salesman, clerk, white-collar worker, etc.
☐ 7. Doctor, dentist, engineer
☐ 8. Teacher
☐ 9. Government service (national, state, or local)
☐ 10. Other (please specify) -----

19. Which of the following best describes your place of residence?

☐ 1. on a farm
☐ 2. in a town that has medical facilities
☐ 3. in a town that does not have any medical facilities

20. About how far do you live from your doctor?
 ----- miles

21. What is your race?

☐ 1. Negro
☐ 2. American Indian
☐ 3. white (Caucasian)
☐ 4. Other (please specify) -----

22. Name of hospital: -----

23. Name of city in which hospital is located: -----

24. Date: -----
 (month day year)

These folders should be returned in groups, once a month to:

Chairman, Department of Obstetrics and Gynecology
 University of South Dakota School of Medicine
 Box 590
 Yankton, South Dakota

Addendum #2

List of Nurses and Hospitals Assisting Mothers During the
South Dakota Prenatal Care Study

Town	Hospital	(1) Obstetric Supervisor, Administrator, or other individuals primarily responsible for disseminating to the mothers, collecting, and re-mailing S. Dak. Prenatal Care Study Forms, and for assisting mothers in their answers.	Address	Number of South Dakota Prenatal Care Study Forms Returned
		(2) Other knowledgeable individuals who assisted mothers, so that their answers were accurate.		
Aberdeen	St. Luke's Hosp.	1) Mary J. Hixson, R.N., B.S. Director of Nursing 2) Mrs. Marguerite Dorman, R.N. Mrs. Tina Stevens, R.N.	St. Luke's Hosp. Aberdeen, S. Dak. (same address) (same address)	675
Armour	Douglas County Memorial Hosp.	1) Ruth Talbot, R.N. Administrator	Douglas Co. Mem. Armour, S. Dak.	92
Belle Fourche	John Burns Memorial Hosp.	1) Mrs. Patricia Lee, R.N. Obstetric Supervisor	1102 Ninth Ave. Belle Fourche, S. Dak.	81
Brookings	Brookings Hosp.	1) Mrs. Marilyn Hanson, R.N. 2) Mrs. Kay Post, R.N. Mrs. Cynthia Schuette, N.A. Mrs. Jay French, N.A.	1016 — 13th Ave. Brookings, S. Dak. 418 Main Ave., S. Brookings, S. Dak. 1368 Fifth St. Brookings, S. Dak. Aurora, S. Dak.	351
Burke	Burke Comm. Memorial Hosp.	1) Joyce Thorne, R.N. Marie Broome, R.N. 2) Pauline Hartog, R.N. June Bartling, R.N. Marjorie Teste, R.N.	Burke, S. Dak. (same address) (same address) (same address) (same address)	92
Deadwood	St. Joseph's Hosp.	1) Sr. M. Emmanuel, OSB Obstetric Supervisor Mrs. B. White, R.N. 2) Mrs. Agnes Luskie, N.A. Mrs. George Geisner, N.A. Miss Norma Adkins, N.A. Mrs. Donna Adkins, N.A.	St. Joseph's Hosp. Deadwood, S. Dak. (same address) 5 B, Smith Apt. Deadwood, S. Dak. 108 S. Wall Lead, S. Dak. 330 Gwinn Lead, S. Dak. (same address)	227
Dell Rapids	Dell Rapids Comm. Hosp.	1) Mrs. Lowell Hink, R.N. Obstetric Supervisor 2) Mrs. Mary Lyng, N.A. Mrs. Sylvia Kampmeyer, N.A.	Dell Rapids Comm. Hosp. Dell Rapids, S. Dak. (same address) (same address)	131
De Smet	De Smet Memorial Hosp.	1) Mrs. Ruth Zeller, R.N. Supervisor of Nurses 2) Mrs. Myrtle Warne, R.N.	De Smet Memorial Hosp. De Smet, S. Dak. Bryant, S. Dak.	74
Eureka	Eureka Comm. Hospital	1) Mrs. Eugene Stoeber, R.N. 2) Miss Pauline Opp, N.A. Mrs. Helen Jacober, N.A.	Eureka, S. Dak. (same address) (same address)	48
Faith	Faith Memorial Hospital	1) Gloria Traversie, R.N. Dorothy Lesselyoung, Bkbp. 2) Fern Whipple, L.P.N. Carol Schad, N.A. Evelyn O'Leary, N.A.	Faith, S. Dak. (same address) Eagle Butte, S. Dak. Dupree, S. Dak. Isabel, S. Dak.	22
Faulkton	Faulk County Memorial Hosp.	1) Miss Veronica M. Goebel, R.N. 2) Mrs. Roger Meliers, R.N.	Faulkton, S. Dak. (same address)	20

Town	Hospital	(1) Obstetric Supervisor, Administrator, or other individuals primarily responsible for disseminating to the mothers, collecting, and re-mailing S. Dak. Prenatal Care Study Forms, and for assisting mothers in their answers.	Address	Number of South Dakota Prenatal Care Study Forms Returned
		(2) Other knowledgeable individuals who assisted mothers, so that their answers were accurate.		
Flandreau	Flandreau Mun. Hospital	1) Doris Eide, R.N.	Flandreau Mun. Hosp. Flandreau, S. Dak.	75
Freeman	Freeman Comm. Hospital	1) Miss Janice M. Jaffer, R.N., B.S.	Freeman Comm. Hosp. Freeman, S. Dak.	99
Gettysburg	Gettysburg Memorial Hosp.	1) Sr. M. Collette, OSF Sr. M. Catherine, OSF 2) Mrs. R. Jensen, R.N.	Gettysburg Mem. Hosp. Gettysburg, S. Dak. (same address) (same address)	123
Herreid	Herreid Hosp.	1) Mrs. Bernice Silen, R.N. 2) Mrs. May Rieker, R.N. Mrs. Ellen Jones, R.N. Mrs. Ruth Wortman, R.N. Mrs. Leona Brandner, N.A.	Herreid, S. Dak. (same address) Pollock, S. Dak. Herreid, S. Dak. (same address)	23
Hot Springs	Lutheran Hosp.	1) Mrs. Goldie Beirle, R.N. 2) Margaret Strain, N.A. Lorene Dickinson, N.A.	Lutheran Hosp. Hot Springs, S. Dak. (same address) (same address)	128
Hoven	Holy Infant Hospital	1) Sr. M. Leonardine	Holy Infant Hosp. Hoven, S. Dak.	19
Hudson	Hudson Comm. Hospital	1) Mrs. Elly G. Iverson, R.N.	Hudson Comm. Hosp. Hudson, S. Dak.	25
Huron	St. John's Hosp.	1) Mrs. Petra Hietter, R.N. Mrs. Eldon Rance, R.N. 2) Mrs. Audrey Clanonbeau, R.N. Mrs. Gayle Bashara, R.N. Mrs. O. Diamond, R.N.	St. John's Hosp. Huron, S. Dak. (same address) (same address) (same address) (same address)	507
Kadoka	Kadoka Mem. Hospital	1) Mrs. Harriet Leiby, R.N. 2) Alvina Brown Wilma Uhler Myrtle Dillon Doris Buxcel	Kadoka, S. Dak. (same address) (same address) (same address) (same address)	68
Lead	Homestake Hosp.	1) Sophia Ton, R.N. 2) Florence Eweldt, R.N.	Homestake Hosp. Lead, S. Dak. 326 Grand Ave. Lead, S. Dak.	6
Madison	Madison Comm. Hospital	1) Laura B. Jensen, R.R.L.	Madison Comm. Hosp. Madison, S. Dak.	227
Martin	St. Anthony Hospital	1) Sr. M. Antonita, R.N. 2) Sr. M. Falcia, L.P.N. Sr. M. Andrea, L.P.N. Sr. M. Peter, N.A.	St. Anthony Hosp. Martin, S. Dak. (same address) (same address) (same address)	67
Milbank	St. Bernard's Providence Hosp.	1) Sr. Teresa Frangella, R.N. 2) Sr. Imelda, R.N. Mrs. Rita Burns, R.N.	101 S. Viola St. Milbank, S. Dak. (same address) (same address)	202
Miller	Hand County Memorial Hosp.	1) Virginia Jenner, R.C. 2) Mary Lou Clegg, R.N.	Miller, S. Dak. St. Lawrence, S. Dak.	77

Town	Hospital	(1) Obstetric Supervisor, Administrator, or other individuals primarily responsible for disseminating to the mothers, collecting, and re-mailing S. Dak. Prenatal Care Study Forms, and for assisting mothers in their answers.	Address	Number of South Dakota Prenatal Care Study Forms Returned
		(2) Other knowledgeable individuals who assisted mothers, so that their answers were accurate.		
Mitchell	Methodist Hosp.	1) Mrs. Beulah Forst, R.N. 2) Mrs. Judy Haenke, R.N.	1118 S. Miller St. Mitchell, S. Dak. Methodist Hosp. Mitchell, S. Dak.	252
Mitchell	St. Joseph's Hospital	1) Mrs. Marie Hall, R.N. 2) Mrs. Harriett Haines, R.N. Mrs. Kathleen Runge, R.N. Miss Elizabeth Pelkey, L.P.N.	821 E. Second St. Mitchell, S. Dak. 1220 E. Fourth St. Mitchell, S. Dak. 1201 E. First St. Mitchell, S. Dak. (same address)	344
Mobridge	Mobridge Comm. Hospital	1) Mrs. Mary Twedt, R.N. 2) Mrs. Ella Halle, R.N. Mrs. Ellen Wessel, R.N. Mrs. Marlene Schlomer, R.N. Mrs. Marilyn De Speigler, R.N. Mrs. Jan Brown, L.P.N. Miss Jeanie Schneider, L.P.N.	Mobridge Comm. Hosp Mobridge, S. Dak. (same address) (same address) (same address) (same address) (same address) (same address)	219
Onida	Onida Comm. Hospital	1) Mrs. Mary Ann Hall, R.N. 2) Miss Lois Dag, N.A.	Onida, S. Dak. (same address)	23
Parkston	St. Benedict Hospital	1) Sr. M. Aimee, OSB, R.N. 2) Miss Gertrude Zens, L.P.N.	St. Benedict Hosp. Parkston, S. Dak. (same address)	207
Pierre	St. Mary's Hospital	1) Sr. M. Mona, R.N. 2) Mrs. Dorothy Fratzke, R.N. Miss Rita Ford, L.P.N.	St. Mary's Hosp. Pierre, S. Dak. Ft. Pierre, S. Dak. Pierre, S. Dak.	354
Platte	Platte Comm. Memorial Hosp.	1) Fran Brummel, R.N. 2) Kathy Vandenbos, R.N. Delores Bultsma, R.N. Everine Schipper, R.N.	Platte, S. Dak. (same address) (same address) (same address)	112
Rapid City	Bennett-Clarkson Memorial Hosp.	1) Mrs. Lucile Ferris, R.N. 2) Mrs. Dottie Boardman, R.N. Mrs. Mary Williams, R.N.	720 Waterloo St. Rapid City, S. Dak. Bennett-Clarkson Hosp. Rapid City, S. Dak. (same address)	496
Rapid City	St. John's McNamara Hosp.	1) Sr. M. Gemma, R.N. Sr. M. Laura, R.N. 2) Mrs. Ann Rabaczewski, R.N. Mrs. Myrna McAlister, R.N. Mrs. JoAnn Wilkie, R.N. Miss Joyce Gruhn, L.P.N.	St. John's Hosp. Rapid City, S. Dak. (same address) (same address) (same address) (same address) (same address)	299
Sioux Falls	McKenna Hosp.	1) Mrs. Ione Gamberg, R.N. 2) Mrs. Jeannette Magnuson, R.N.	McKenna Hosp. Sioux Falls, S. Dak. (same address)	1141
Sioux Falls	Sioux Valley Hospital	1) Mrs. E. Roberts, R.N. 2) Mrs. Charlotte Boschke, Med. Sec.	814 S. Walts Ave. Sioux Falls, S. Dak. 423 N. Nesmith Ave. Sioux Falls, S. Dak.	865

Town	Hospital	(1) Obstetric Supervisor, Administrator, or other individuals primarily responsible for disseminating to the mothers, collecting, and re-mailing S. Dak. Prenatal Care Study Forms, and for assisting mothers in their answers.	Address	Number of South Dakota Prenatal Care Study Forms Returned
		(2) Other knowledgeable individuals who assisted mothers, so that their answers were accurate.		
Sisseton	Roberts County Hospital	1) Mrs. Georgia O. Hamm, R.N. 2) Gail Benson, R.N.	Sisseton, S. Dak. (same address)	78
Sturgis	Sturgis Comm. Memorial Hosp.	1) Anna B. Rose, R.N. 2) Mrs. Kaye Symonds, R.N.	1619 Davenport St. Sturgis, S. Dak. North Sixth St. Sturgis, S. Dak.	130
Tyndall	St. Michael's Hospital	1) Sr. M. Blanche Kribell, R.N. 2) Sr. M. Clarence, R.N. Sr. M. Paulette, R.N.	St. Michael's Hosp. Tyndall, S. Dak. (same address) (same address)	86
Vermillion	Dakota Hospital	1) Mrs. Gladys Westburg, R.N. Mrs. Mary Worman, R.N. 2) Mrs. Marie Willekes, R.N. Mrs. Julie Souhrada, R.N.	Dakota Hosp. Vermillion, S. Dak. (same address) (same address) (same address)	133
Viborg	Pioneer Mem. Hospital	1) Mrs. Lillian M. Kuhler, R.N. 2) Cornelia Dickerson, R.N. Sharon Akland, R.N. Marian Jenter, R.N. Grace Glidden, R.N. Ruby Knutson, R.N.	Wakonda, S. Dak. Viborg, S. Dak. Irene, S. Dak. Centerville, S. Dak. Wakonda, S. Dak. Centerville, S. Dak.	44
Wagner	Wagner Comm. Hospital	1) Mrs. Louise Trotter, R.N. 2) Mrs. Ruth Moncrief, R.N. Mrs. Rita Reed, R.N. Mrs. Diana Syfie, R.N. Mrs. Fern Stedronsky, R.N.	Wagner, S. Dak. Pickstown, S. Dak. (same address) Wagner, S. Dak. (same address)	70
Watertown	Watertown Memorial Hosp.	1) Mrs. Helen Harmel, R.N. 2) Bernice Eikamp, R.N. Ruth Voss, L.P.N. Fern Gordon, N.A.	Memorial Hosp. Watertown, S. Dak. (same address) (same address) (same address)	284
Watertown	St. Ann's Hosp.	1) Sr. M. Fidelia, R.N. 2) Mrs. Marie Appelhof, R.N. Mrs. Bertha LaFramboise, R.N.	St. Ann's Hosp. Watertown, S. Dak. 738 2nd Ave. N.E. Watertown, S. Dak. R. R. 2 Watertown, S. Dak.	238
Wessington Springs	Jerauld County Memorial Hosp.	1) Mrs. Elizabeth Peck, R.N. 2) Esther DeJong, N.A.	Wessington Spr., S. Dak. (same address)	72
Winner	Baptist Hosp.	1) Mrs. Cecelia Ross, R.N. 2) Mrs. Connie Heggstad, R.N. Mrs. Lucille Gilliland, R.N. Mrs. Esther Burket, R.N. Mrs. Margaret Gromer, N.A.	Baptist Hosp. Winner, S. Dak. (same address) (same address) (same address) (same address)	81
Yankton	Sacred Heart Hospital	1) Sr. M. Blanche Kribell, R.N. Sr. M. Lauren Mueller, R.N. 2) Mrs. Rodney Drotzman, R.N. Mrs. Richard Roe, R.N. Miss Jarita Ramas, R.N. Mrs. Sharon Sternhaven, L.P.N.	Sacred Heart Yankton, S. Dak. (same address) (same address) (same address) (same address) (same address)	595

Town	Hospital	(1) Obstetric Supervisor, Administrator, or other individuals primarily responsible for disseminating to the mothers, collecting, and re-mailing S. Dak. Prenatal Care Study Forms, and for assisting mothers in their answers.	Address	Number of South Dakota Prenatal Care Study Forms Returned
		(2) Other knowledgeable individuals who assisted mothers, so that their answers were accurate.		
Ellsworth Air Force Base	Ellsworth Air Force Base Hospital	1) Georgia M. Bristol, Maj. USAF, NC 2) 2nd Lt. Mary Ann Busch, USAF, NC Alfreda Cameron, R.N. Florence L. Wooters, R.N. Fern Bulian, R.N.	821 Med. Grp. Ellsworth AFB, S. Dak. (same address) 718 Driger Ave. Rapid City, S. Dak. 810 E. Tallent Rapid City, S. Dak. 1115 St. Joseph St. Rapid City, S. Dak.	277
Eagle Butte	Public Health Service Indian Hospital	1) Alice Bridges, R.N. 2) Clara Wickholm, R.N. Mrs. Mary Bowman, R.N.	PHS Indian Hosp. Eagle Butte, S. Dak. (same address) (same address)	130
Pine Ridge	Public Health Service Indian Hospital	1) Lillian R. Talbott, R.N.	PHS Indian Hosp. Pine Ridge, S. Dak.	225
Rosebud	Public Health Service Indian Hospital	1) Ruby A. Swanson, R.N. 2) Jennie C. Gehrig, R.N.	PHS Indian Hosp. Rosebud, S. Dak. (same address)	135
Sisseton	Public Health Service Indian Hospital	1) Mrs. Lesil M. Thayer, R.N. 2) Mrs. Naomi Renville, R.N. Mrs. Darlene Fischer, R.N.	PHS Indian Hosp. Sisseton, S. Dak. (same address) (same address)	121
Wagner	Public Health Service Indian Hospital	1) Zella Bastemeyer, Rec. Clerk	PHS Indian Hosp. Wagner, S. Dak.	34
TOTAL				10,523

Key: B.S. — Bachelor of Science
R.N. — Registered Nurse
L.P.N. — Licensed Practical Nurse
N.A. — Nurse Aide

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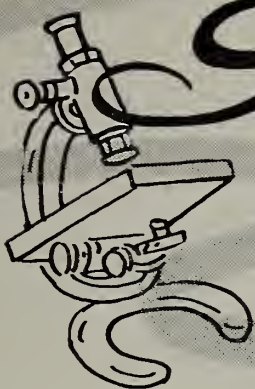
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PAPER

ISOTOPIC LIVER SCANNING

by

Loyd R. Wagner, M.D.*

and

T. R. Anderson, M.D.*

Since shortly after World War II, a number of radioactive isotopes have become available, which are of value in clinical medicine both diagnostically and therapeutically. Coincident with the development of these radiopharmaceuticals, improvements in detecting devices have made possible accurate localization of these tracers in the body, and have led to the development of numerous dynamic functional studies, as well as techniques for isotopic imaging of various organs. During the past five years, rectilinear scanning devices have been nearly perfected, allowing widespread application of the isotopic imaging technique to the study of many organs, such as brain, lung, spleen, liver, kidney and bone, as well as further expansion of its application in thyroid disease, where its initial use was greatest.

Isotopic imaging of the liver has proven to be of great value in clinical medicine. It is the purpose of this communication to discuss some of the varied aspects of isotopic liver imaging, and to call attention to its availability and benefits to the patient.

The ability of the liver to concentrate and/or excrete many varied substances has made the development of pharmaceuticals with radioactive tracers for the liver relatively easy. Rectilinear scanning of the liver with radioisotopes, therefore, provides a simple and effective

means of assessing a number of factors in liver function and morphology such as configuration, size, intra-abdominal location, the presence or absence of tumor metastasis, primary hepatic tumors, abscesses and cysts; and general function and excretory ability of the liver.

AGENTS USED FOR LIVER SCANNING:
The various agents which are used for isotopic scanning of the liver are divided into two groups, depending on whether the substance used as the isotope carrier is concentrated by the hepatic polygonal cells, or by the cells of the reticulo-endothelial system. A number of substances which collect in the reticulo-endothelial system are available. Among these are radioactive gold in colloidal state. This isotope (Au-198) in a dosage of 100-200 microcuries gives an effective scan delimiting hepatic size and configuration. This substance results in a liver dosage of 5-10 rads, and its major disadvantage is that it is captured and decays almost entirely within the reticulo-endothelial system. It provides no information concerning the integrity of the hepatic cell. Technetium sulfur colloid (Tc99m) also concentrates in the reticulo-endothelial system. The usual dosage rate is higher, 3-5 millicuries. This results in a liver radiation dose of approximately 1 rad. Its major advantage is stated to be increased speed of scanning. Iodinated serum albumin (I-131), macroaggregated, can be used in a dosage of 200-300 microcuries in the adult. This results

* McKennan Laboratories
Sioux Falls, South Dakota

in a liver dosage of 0.1 rad, but its chief disadvantage is that it is metabolized in the body, and results in a rather high thyroid dosage of I-131.

The most useful substance which concentrates in the polygonal cell of the liver is sodium rose bengal (I-131). In a dosage of 100-200 microcuries in the adult, the usual liver radiation dosage is 0.25 to 0.5 rads. While any of the above mentioned substances give effective scans concerning size, location and configuration of liver, it appears that sodium rose bengal (I-131) is the ideal substance for the study of the liver for various reasons. First, the isotope results in rather low liver radiation, and there is little other significant radiation in the body. This dye is excreted almost entirely through the hepatic system, with 85 percent appearing in the gastrointestinal tract. This substance is not re-absorbed; therefore, the radiation is eliminated from the body with fecal evacuations and less than 5 percent of the I-131 appears in the thyroid. Furthermore, physiologic function of the polygonal cell can be evaluated with sodium rose bengal (I-131). Among the factors which can be assessed are clearance rates from the blood pool; uniformity of concentration in, and excretion from, the liver; concentration in the gallbladder; and its appearance in the gastrointestinal tract to evaluate hepatic duct obstruction or patency.

TECHNIQUE: Performance of radioisotopic scanning of the liver is relatively simple, requiring no special preparation of the patient. The radioactive drug is given intravenously, employing a dose of 100-150 microcuries. This amount of radiation has consistently given a good quality scan. Within ten minutes the scan is begun in the anteroposterior projection, with the detector moving from the caudad to the cephalad position, to avoid concentration of radiation in the gallbladder, and GI tract excretion interference. Scanning at this time also evaluates clearance from the blood pool, inasmuch as a normal individual will have cleared approximately 90-95 percent of the radioactivity from the blood stream. The patient is then scanned in the right lateral projection, and finally rescanned in the anteroposterior projection with the detector passing from the cephalad to the caudad position. Scanning 45 minutes to one hour after the isotope injection is useful in evaluating clearance from the liver, concentration of the substance in the gallbladder and bile ducts, and assessment of excretory function and patency of extrahepatic biliary ducts.

CA - 1 - A



An AP scan shows enlargement of the liver below the right costal margin. There is a large defect in the right lateral portion of the liver.

CA - 1 - B



A right lateral projection on this patient shows a large irregular area with lack of isotope uptake in the right posterior region of the liver. The presence of a large metastatic tumor nodule in the liver was confirmed at this site by laparotomy.

CASE PRESENTATIONS

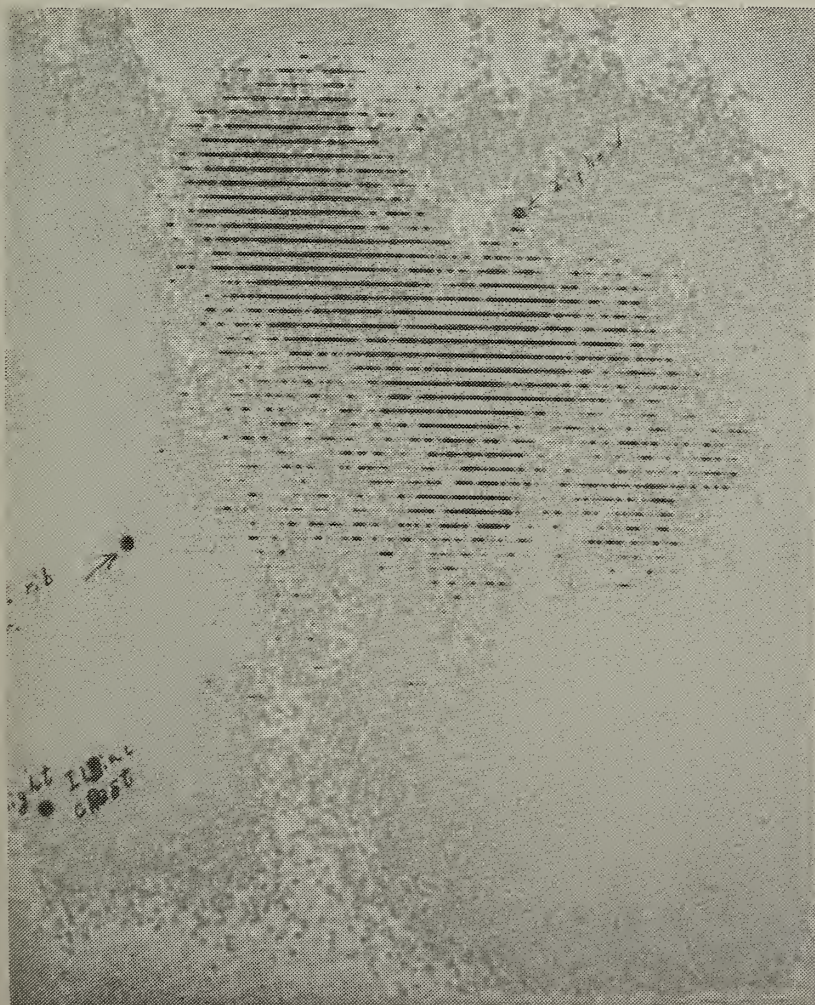
Case No. 1: This patient, a 33 year old white female, was admitted with a history of rectal bleeding. Radiographic study of the colon revealed a constricting lesion in the midtransverse colon. The patient had an enlarged, tender liver, but liver function tests were essentially normal. Radioisotopic scanning of the liver was carried out with a dosage of 127 microcuries of sodium rose bengal (I-131). This demonstrated a large defect in the right posterolateral margin of the liver, measuring approximately 7.5 cm. in diameter. The patient was subsequently subjected to laparotomy because of intestinal obstruction, at which time the presence of a large metastatic lesion of the liver was confirmed. (CA - 1 - A and B)

Case No. 2: The patient was a 76 year old white female admitted with a history of upper gastrointestinal distress. The upper gastrointestinal X-rays revealed the presence of a defect in the stomach consistent with carcinoma. The patient had an enlarged and tender liver. Liver function tests showed an elevated SGOT, slight jaundice and elevated alkaline phosphatase. Isotopic scanning of the liver with 130 micro-

curies of sodium rose bengal (I-131), revealed marked enlargement of the liver, with multiple areas of decreased concentration present, indicative of replacement of parenchymal cells by metastatic malignancy. The presence of metastatic disease in the liver was confirmed by surgical exploration. (CA - 2 - A)

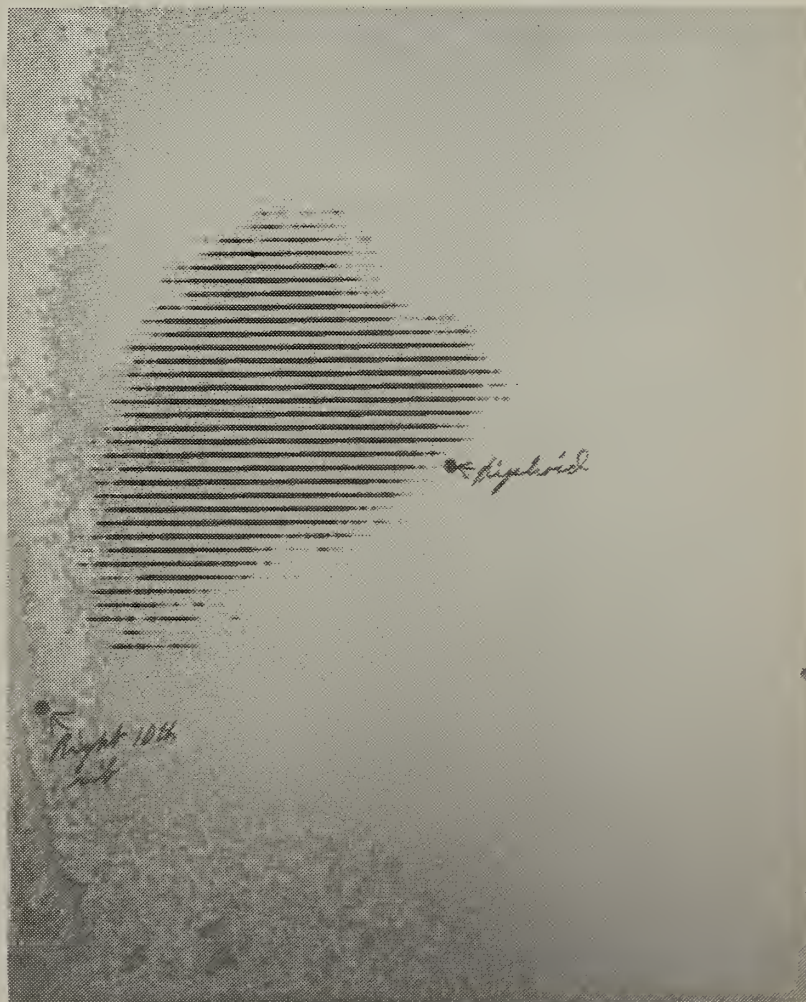
Case No. 3: The patient was an 85 year old white female, who had suffered from mild jaundice for approximately one year. She had previously been examined, and a diagnosis of cirrhosis of the liver was made. The patient had had a cholecystostomy and cholecystectomy. Physical examination, other than for mild jaundice, was unrevealing. The liver was not palpable, and function tests revealed an obstructive pattern. The patient was scanned with a dosage of 132 microcuries of sodium rose bengal (I-131). The scan, begun in 10 minutes, revealed total clearance of the isotope from the blood stream, with uniform concentration in a small liver. The scan taken to assess excretion showed no loss of radioactivity in the liver, and no activity appearing in the gastrointestinal tract. The patient was rescanned 20 hours after administration of the isotope, at which time, concentration of radioactivity was still present in the liver, and

CA - 2 - A



An AP scan demonstrates marked enlargement of the liver below the costal margin. There is an irregular patchy uptake in all areas of the liver, with small discrete areas lacking radioisotopic uptake, measuring 1-2 cm. in diameter.

OBSTRUCTION - A



An AP projection shows complete clearing of radioisotope from the blood stream, with uniform concentration throughout the liver. The liver is somewhat small, but shows no areas of decreased uptake.

OBSTRUCTION - B

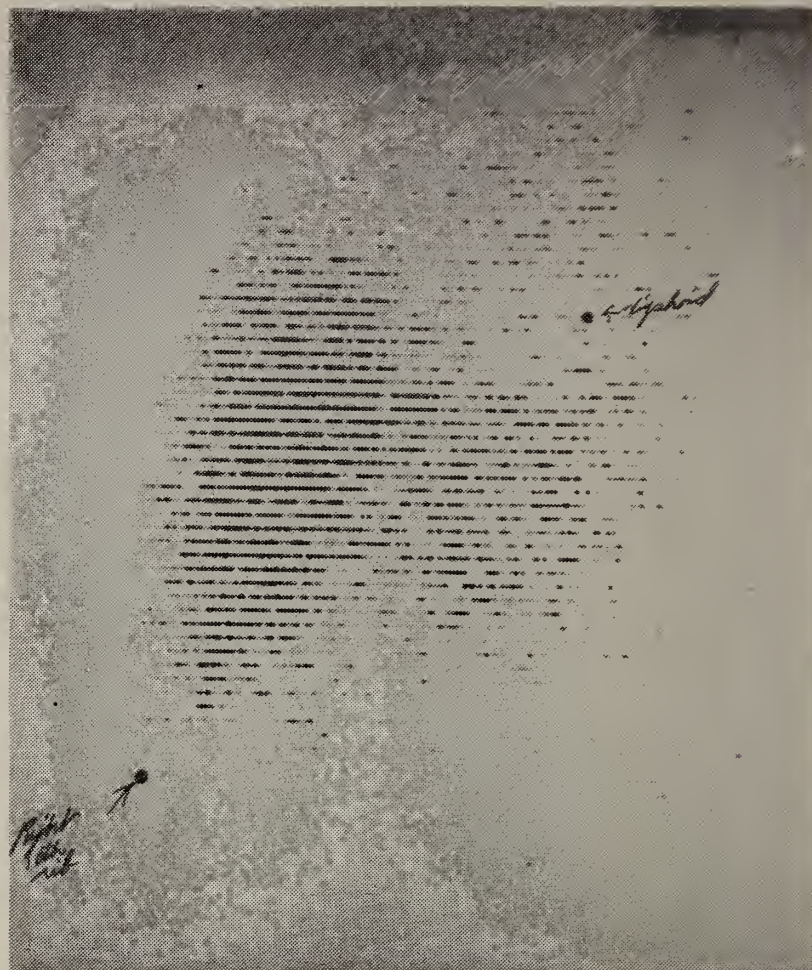


In an AP projection on the same patient 24 hours after injection of the isotope, there is still high concentration of rose bengal I-131 in the liver. An irregular projection below the margin of the liver, just to the right of the xiphoid, is consistent with a dilated common duct found on this patient at surgery. There has been minimal egress of radioactivity into the gastro-intestinal tract.

an increased concentration could be demonstrated in the gallbladder region. There was virtually no radioactivity in the gastrointestinal tract. On the basis of these findings, a diagnosis of extrahepatic biliary obstruction was made. The patient was explored, and the common duct found to be dilated to 2.5 cm. in diameter, with a large stone impacted at the ampulla of Vater. The dilated common bile duct was the structure visualized on the scan. (Obs. - A and B)

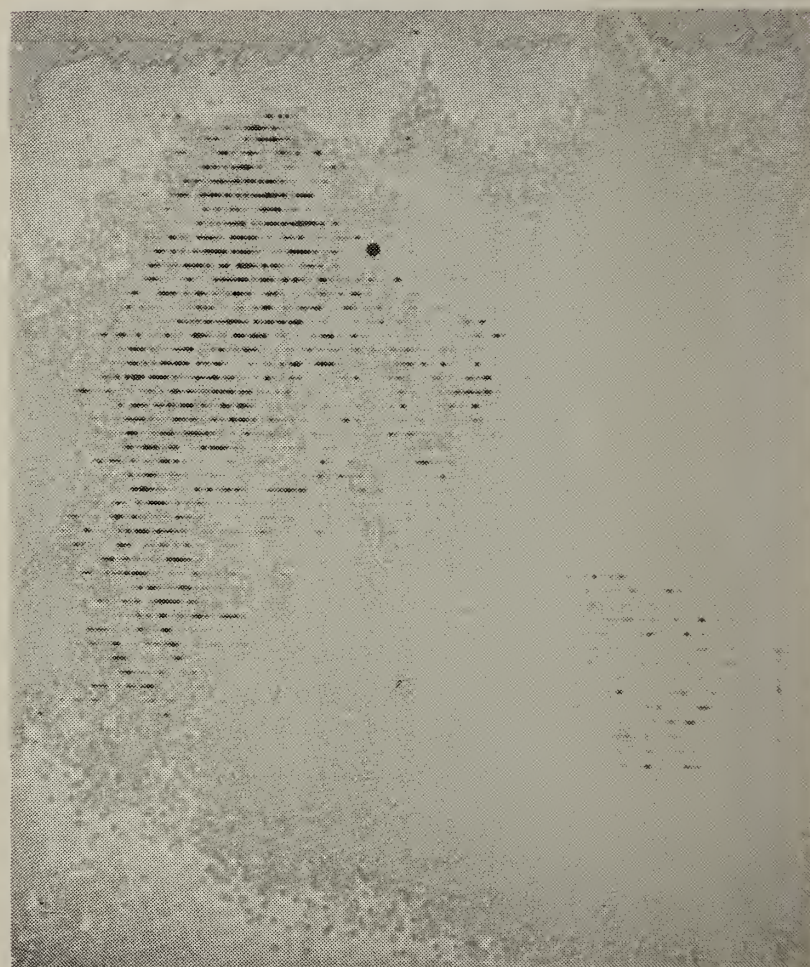
Case No. 4: The patient was a 75 year old white female with a 6-month history of jaundice, malaise, clinical and laboratory findings of acute infectious hepatitis. The patient had been treated with steroids, with some improvement. On cessation of the therapy, however, the jaundice deepened, and the general condition of the patient deteriorated. Radioisotopic scanning was carried out with sodium rose bengal (I-131). This patient showed relatively little concentration of radioactivity in the liver within 15 minutes, with a high blood background. Assessment of excretory function in one hour still showed a high blood background, no concentration in the gallbladder, and a patchy uptake in

CIRRHOSIS - A



An AP scan on the patient shows a high blood and body background obscuring the outline of the liver. Concentration of the isotope in the organ itself is patchy and irregular, being consistent with either cirrhosis or metastatic tumor.

CIRRHOSIS - B



An AP scan on the same patient 24 hours later still shows a high degree of radioactivity remaining in the liver parenchyma. There is no evidence of obstruction to outflow, inasmuch as there is a large amount of isotope present in the lower left portion of the photograph, consistent with isotope in the jejunum.

the liver itself. This patient was rescanned 24 hours later, showing clearing of the isotope from the blood stream, concentration of isotope in the gallbladder, and passage of radioactivity into the gastrointestinal tract. On the basis of these findings, a diagnosis of post-necrotic cirrhosis of the liver was made. (Cirrhosis - A and B)

DISCUSSION

The four cases presented in this paper illustrate the major information which can be gained from the use of isotopic scanning of the liver with a substance such as sodium rose bengal I-131. This substance, which is excreted by the hepatic polygonal cells, gives a truly physiologic-anatomic blending of data about the liver which cannot be obtained in any other manner.

Sodium rose bengal dye is cleared from the blood stream almost entirely by the hepatic polygonal cells, with most of the clearance occurring in the first passage of blood through the liver. If damage occurs to the parenchymal cells which interferes with extraction of materials from the blood stream, the dye remains circulating for a longer period of time than normal. Information, therefore, about the integrity of the parenchymal cell can be obtained in the initial hepatic scan by comparing count rates obtained over the liver with those over the rest of the body, particularly the precordium. Case No. 4 above, demonstrates the fact that damage to the parenchymal cell results in slow clearance from the blood stream with a "dirty" scan obtained over the entire body, without a clear delineation of the liver.

The uniformity of concentration in the liver also directly reflects the integrity of the parenchymal cell. Functional cells have a uniform concentration of radioactivity because of uniform perfusion throughout the liver. When hepatic cells are damaged, or replaced, decreased radioactivity in the region appears, and these "cold" spots become of importance in interpretation of the scan. "Cold" spots appear in patients with cirrhosis, tumor metastasis to the liver, cysts, or primary tumors. "Hot" spots are not considered in hepatic scan evaluation, as opposed to interpretation of some other organ scans in which a radioactive substance is specifically concentrated by abnormal tissue.

The normal patient begins to excrete the radioactive rose bengal within 20-30 minutes after injection. Increased concentration of radio-

activity can usually be demonstrated in the region of the gallbladder, or in the region of the dilated common duct as illustrated in Case No. 3 above. Increased concentration over the gallbladder is usually the first indication of normal excretory function. The appearance of radioactivity in the gastrointestinal tract is indicative of patency of the extrahepatic biliary ducts. In most instances, radioactivity will have progressed as far as the proximal jejunum by the time hepatic imaging is completed. Lack of appearance of radioactivity in the gastrointestinal tract, with retention of high count rates in the liver are indicative of obstruction, again as illustrated in Case No. 3 above.

SUMMARY

The use of I-131 sodium rose bengal isotopic scanning of the liver provides an excellent tool for the assessment of liver function and anatomy. It appears to be the ideal substance for isotopic scanning because of the ease with which dynamic hepatic function can be assessed. Rapidity of clearance of isotope from the blood stream gives a good indication of the integrity of the parenchymal cell. Concentration in the parenchymal liver cells gives a good indication of liver size, configuration and abnormalities of structure. Evaluation of excretory function, sometimes with the scan delayed 20-24 hours after injection of the isotope, gives excellent evaluation of extrahepatic biliary duct patency.

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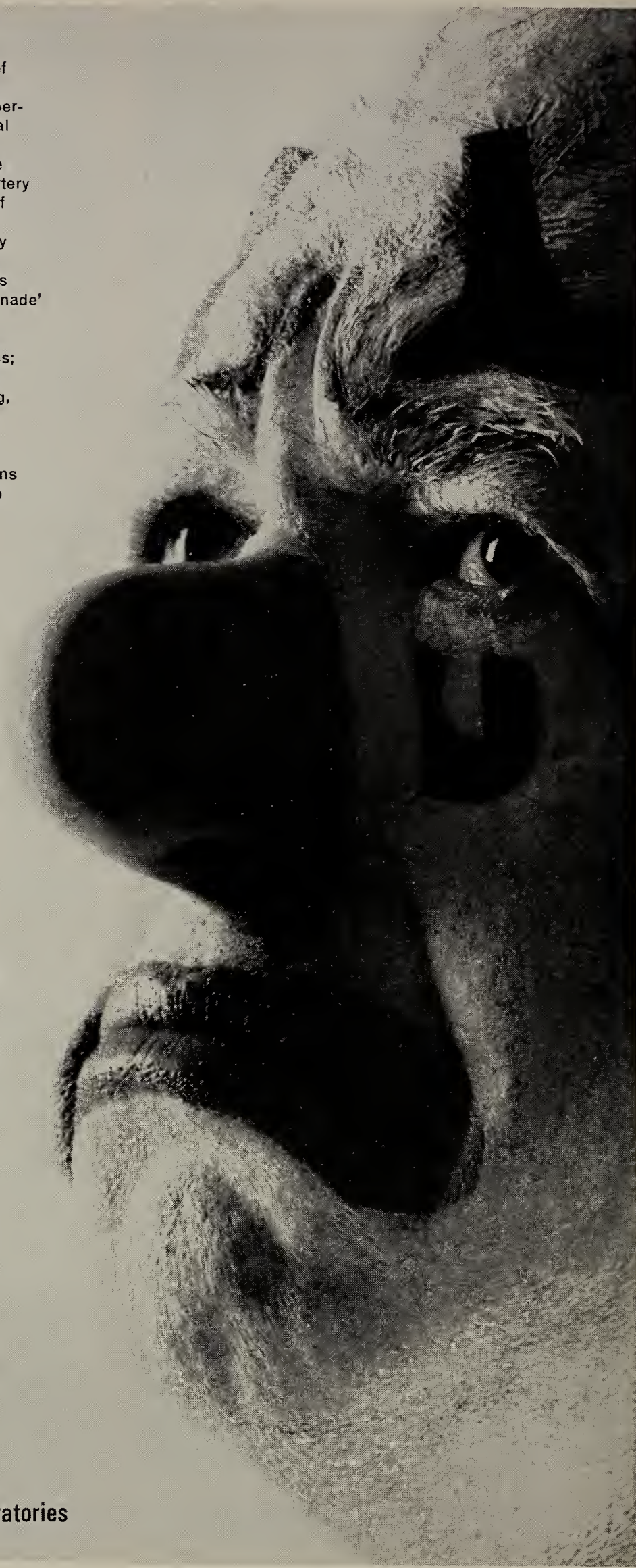
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THE ETIOLOGY OF NON-GONOCOCCAL URETHRITIS*

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Although the British Venereal Diseases Service was initiated in 1916, non-gonococcal or non-specific urethritis was not made a reportable disease until 1952. Since then, the number of reported cases has risen from 11,552 in 1952 to 25,001 in 1963¹ and undoubtedly there has been a similar increase in other countries. However, even without considering the social implications of a condition of this nature, the importance of non-gonococcal urethritis is out of proportion to the number of cases because the patient often relapses and the condition frequently becomes chronic.

Although the cause in the male is usually unknown, non-gonococcal urethritis has many of the characteristics of an infection which is transmitted by sexual contact and in their investigation of the etiology of this condition, Csonka, Williams and Corse² never found an individual who denied sexual intercourse within three months of the onset of the urethritis or, indeed, an instance in which both parties denied ever having sexual contact with a third person.

The incubation period, therefore, has been estimated to range from a few days to over a month with a peak at 2-3 weeks. Symptoms vary in severity and may last from one day to several months. The mucopurulent urethral discharge consists of a variable proportion of pus and epithelial cells in which the pus cells

normally predominate.² Even though no microorganisms can be detected in stained smears, the primary attack usually responds within a few days to therapy with the broad spectrum antibiotics, e.g. tetracyclines, suggesting that an antibiotic sensitive organism is involved. For this reason, a virus is not likely to be the sole etiological agent. However, Chu³ observed that avian infectious bronchitis, a disease normally lasting 2-3 weeks is changed into a chronic illness lasting several months by a superimposed mycoplasma infection. Mycoplasmas have been isolated repeatedly from non-gonococcal urethritis. Therefore, the possibility of an infection initiated by a virus cannot be completely excluded.

MYCOPLASMAS

The T-strain (T for tiny colony) mycoplasmas^{2, 4, 5, 6, 9} and *Mycoplasma hominis*^{17, 8} have been isolated most frequently from the genitourinary tract. The minimal reproductive units of these organisms have no cell wall but a triple layered cytoplasmic membrane, stain poorly and are at the limit of light microscopy being 100-200 μ diam. They would be almost impossible to detect in stained smears but both species can be isolated readily on suitable bacterial type media containing thallium acetate and penicillin to eliminate bacterial contamination. They are easily differentiated by their colony size on agar, those of *M. hominis* 1 being about 100 μ diam. and those of the T-strains 20 μ diam.

* Presented as a Seminar in the Department of Microbiology, School of Medicine, University of South Dakota, May 24, 1967.

Both species of mycoplasma are found in normal individuals, in non-gonococcal urethritis and concomitantly with other genitourinary infections such as gonorrhea.^{2, 6} *M. hominis* 1 can be isolated from about 10-20% of non-gonococcal urethritis patients and a similar percentage of controls.^{2, 6} Therefore, even if one or more strains are pathogenic, the majority (over 80%) of patients are infected with other pathogens. The T-strains are found in 60-80% of non-gonococcal urethritis cases.^{2, 4, 5, 6, 9, 10, 11} However, while only 10-20% of normal men harbor these organisms, they are found in the urine of 60-70% of normal females² which suggests that they are commensals of the genitourinary tract and a carefully controlled study by Ingham et al⁶ supports this supposition. They examined not only non-gonococcal urethritis patients but also patients with acute gonorrhea and normal individuals of a promiscuous disposition similar to their patients. There was no statistical difference in the rate of isolation of T-strains from the three groups, the incidence being 66%, 61% and 48% respectively. Patients with gonorrhea were treated with penicillin which does not eliminate the T-strain mycoplasmas. Yet, of the 36 patients in this group, only four got non-gonococcal urethritis within 19 days and two of these individuals were not infected with T-strains. This evidence suggests that non-gonococcal urethritis is unlikely to be a concomitant infection of T-strain mycoplasma and another pathogen but supports the belief of Shepard⁴ and Ford and DuVernet¹² that the incidence of infection with mycoplasmas is directly related to the sexual promiscuity of the group of individuals under investigation. It is exceptionally difficult to infect healthy animals experimentally with mycoplasmas³ without first inducing trauma¹³ or introducing a superimposed virus infection.¹⁴ The fact that the controls of Ingham et al⁶ visited the Venereal Disease Clinic for advice suggests that they had some symptoms and the higher incidence in these male controls than in those of Csonka et al² who were normal individuals, not potential patients in their clinic, may be because non-specific traumatic or inflammatory conditions predispose the male urethra to infection with these organisms.

BEDSONIAE

Before bedsoniae were isolated from non-gonococcal urethritis patients,^{16, 17} inclusion bodies similar to those found in cells infected with trachoma, lymphogranuloma venereum and inclusion blennorrhoea which are known

to be transmitted sexually were described in cells obtained by scraping the urethra.^{18, 19, 20}

Bedsoniae are intracellular parasites which were originally considered large antibiotic sensitive viruses until shown to contain muramic acid,²¹ a constituent of the bacterial cell wall and to increase exponentially^{22, 23, 24} by binary fission.²⁵

The infectious unit of inclusion blennorrhoea and lymphogranuloma venereum was first seen by fluorescence microscopy as a deoxyribonucleic acid (DNA) particle between 1.0-0.20 u diam.^{23, 24} In fact, Furness et al^{23, 24} found that it consisted of a DNA core with a thin ribonucleic (RNA) outer layer. On infecting a cell the thickness of the RNA layer increased with a concomitant enlargement of the particle to about 2 u diam. and a change in its staining properties from DNA to RNA, the color of the DNA core being masked by the RNA. After a lag of about 11-12 hr. after entering the cell, the RNA particles increased exponentially with a mean generation time of 2¼ hr.²⁵ and electron micrographs showed that they divided by binary fission.²⁵ During this phase, the particle was not infectious extracellularly and the cell cytoplasm around the cluster of dividing RNA particles dissolved to form the cell inclusion typical of these organisms. About 21 hr. after infection of the cell, infectious DNA particles began to appear and gradually replaced the RNA particles. Furness et al^{22, 23} found that the number of DNA particles seen in each inclusion reached their maximum between 39-42 hr. and greatly exceeded the number of particles capable of infecting other cells which averaged 50-60 per inclusion.

With practice, the inclusion bodies are easily recognized in cells stained with Giemsa. Yet, Dunlop et al^{16, 17} in their investigation were only able to isolate bedsoniae from two patients and see inclusions in the scrapings of two more of the 10 patients examined. This is in marked contrast to the results obtained by Pasieczny and Sommerville²⁶ who over a period of 13 months screened 514 individuals of whom 200 were non-gonococcal urethritis patients, 200 promiscuous controls and 114 cases of gonorrhoea for antibodies to bedsoniae by the complement fixation test using the LB4 strain of inclusion blennorrhoea as antigen. If a titre of 1/32 is considered positive, 25% of the non-gonococcal urethritis patients, 22% of the gonorrhoea patients and 15.5% of the controls were positive. On treatment the antibody titre fell below 1/32 within 4 to 6 weeks, suggesting that

the controls who had come to the Venereal Diseases Clinic for advice had been infected. Even though the authors had evidence that this was a localized outbreak due to bedsoniae, only 25% of the non-gonococcal urethritis cases could be ascribed positively to these organisms, the etiological agent of the other 75% remaining undetermined.

DIPHATHEROIDS

The bedsoniae vary in their susceptibility to antibiotics in vivo and in vitro^{27, 28} and early failures to isolate trachoma can be attributed to the addition of penicillin to the conjunctival scrapings which eliminated both bacterial contamination and the pathogen.²⁷ Harkness¹⁸ and Klieneberger-Nobel⁸ showed that it was possible to obtain specimens from the male urethra aseptically and that the urethra is normally free from bacteria except for the anterior portion and orifice which have a rich saprophytic flora.¹⁸ In all the investigations into the etiology of non-gonococcal urethritis quoted, antibiotics were added to the material to be examined with the possibility that a pathogen was inactivated. Furness and Csonka²⁹ obtained urethral washings aseptically from non-gonococcal patients and promiscuous controls visiting a Venereal Diseases Clinic by using a double cannula which reduced contamination to a satisfactory level. The washings were examined by inoculating blood agar plates and the yolk sac of embryonated eggs which enable many viruses and bacteria, including the bedsoniae, to be isolated from infected material.³⁰ An exception is the mycoplasmas of human origin which may grow but fail to kill the egg.^{31, 10} Thus the T-strains would not be isolated by their technique and, in fact, they could not attribute the death of any embryo to mycoplasmas even when eggs were inoculated with pure cultures.

They isolated penicillin sensitive strains of diphtheroids which would not grow on media on first isolation, from 94.3% patients and 11.1% promiscuous controls by passage in ovo. The diphtheroids consisted of several biochemically different strains. However, the same serotype of the *Corynebacteriaceae* may contain strains that differ biochemically³² and these non-gonococcal urethritis strains could have the common property of pathogenicity. The contention of Furness and Csonka²⁹ that these organisms could be associated with the condition was supported by their inability to isolate them on clinical cure, by their return on relapse and by their continued presence in patients who did

not respond to treatment. Their results do not exclude the presence of another antibiotic sensitive organism, the presence of which is masked by the diphtheroids. They stress that even if these diphtheroids prove to be commensals, the isolation of organisms which like trachoma are sensitive to penicillin in vitro, has amply demonstrated the importance of eliminating contamination, wherever possible, by aseptic techniques rather than by antimicrobial agents.

DISCUSSION

Three groups of microorganisms have been considered as the etiological agent of non-gonococcal urethritis; namely, mycoplasmas, bedsoniae and diphtheroids.

The similarity in the percentages of normal females, of promiscuous male controls, of acute gonorrhoea and of non-gonococcal urethritis patients carrying T-strain mycoplasmas strongly suggests that they are not the etiological agent even though they can be isolated from about 80% of the individuals in these groups. However, as yet, little is known about differences within each species of mycoplasma and some strains may be pathogenic or potentially pathogenic causing urethritis after trauma or another infection.

Bedsoniae undoubtedly are capable of causing urethritis in certain selected cases, but Dunlop and his colleagues¹⁶ are careful to point out that the relationship between the bedsoniae and non-gonococcal urethritis remains to be established. However, it is unlikely that they are the predominant cause of this condition.

The importance of the diphtheroids isolated by Furness and Csonka²⁹ remains to be confirmed, but there was a significant difference between the incidence in their promiscuous controls and their patients.

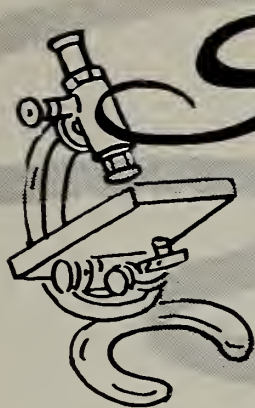
Cross reactions occur between the antigens of the anaerobic intestinal diphtheroids which frequently cause infection of the reticulo-endothelial system and the antigens of other diphtheroids such as *Corynebacterium acne*, and this can lead to hypersensitivity.³² Allergy has been postulated as the mechanism of non-gonococcal urethritis by Weston³³ who analyzed the relationship between 100 non-gonococcal urethritis patients and their consorts and found that this condition tends to occur more frequently in stable than in casual relationships. A high degree of consort specificity was indicated by a tendency for the first attack to occur within a few months of an association with a particular consort and by the frequency

of recurrence after re-exposure with the same individual. Using a precipitin test he obtained not only cross reactions between the urethral discharge of the patient and his consort's serum but also between the consort's vaginal secretions and the patient's serum indicating that antigens and antibodies were present in both partners. If non-gonococcal urethritis is an allergic response to antigens in the vaginal secretions, a response to antihistamine therapy might be expected but there is no record of their use.

Duthie and his colleagues³⁴ now report that diphtheroids can be isolated from the synovial tissues of about 20% of patients with rheumatoid arthritis using tissue culture media without antibiotics, and it is interesting to speculate whether hypersensitivity to antigens of diphtheroids mediates the tissue reactivity in non-gonococcal urethritis and also in rheumatoid arthritis. A combination of a low grade infection with these organisms and delayed hypersensitivity either to the bacterial antigens or metabolic products could account for both the symptoms of non-gonococcal urethritis and rheumatoid arthritis. However, as yet, this is only an hypothesis and the identity of the etiological agent of non-gonococcal urethritis is still uncertain.

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Scientific

PAPER

EXTRAPULMONARY OXYGENATION BY CONTINUOUS HYDROGEN PEROXIDE INFUSION*

C. A. Stern, M.D.
W. E. Brennock, M.S.

The authors wish to express their appreciation to Drs. W. O. Read, W. L. Jones and R. P. Spoor of the School of Medicine for their help and suggestions.

An effective, safe, and simple procedure for extrapulmonary oxygenation should alter the prognosis in those respiratory diseases commonly associated with a reversible impairment of gas exchange in the lungs.

The respiratory distress syndrome (RDS) in infants appears to be a self limited disease process; if the neonate survives the effects of hypoxia over a 24 to 48 hour interval, re-establishment of normal pulmonary function may occur. Thus, a procedure for extrapulmonary oxygenation which could meet the metabolic needs of the brain by maintaining an arterial pO_2 above 50 mm Hg. for an extended time, would improve the survival rate of infants suffering from RDS.

Extra corporal oxygenation by means of A-V shunts has been attempted by several investigators^{9, 12} for the treatment of RDS. However, to date, the results have not been promising. Limitations imposed by the increased metabolic need for oxygen due to the relatively large surface area of an infant, as well as the prolonged period of time during which extra corporal circulation and oxygenation must be maintained have discouraged the use of this procedure in the treatment of RDS.^{1, 10}

Extrapulmonary oxygenation by direct intravascular infusion of gaseous oxygen would, theoretically, alleviate many of the difficulties encountered in extra corporal oxygenation, particularly those associated with the maintenance of adequate flow rates. Intravascular infusion of oxygen appears safe if flow rates are maintained between 1/7 to 1/10¹¹ of the basal metabolic requirement; infants with respiratory distress following traumatic deliveries who have been infused with gaseous oxygen at a rate of 1 cc/min/kg, failed to show any evidence of embolic complications.⁶

However, the therapeutic value of prolonged intravascular infusions of oxygen for the maintenance of arterial pO_2 in the presence of pulmonary dysfunction, remains to be proven. The regulation of the continuous flow of gas must be exact since the large bubbles of oxygen are more likely to result in air embolism or cardiac tamponade.^{5, 11}

Embolic phenomena can, in theory, be reduced by the utilization of dilute solutions of hydrogen peroxide as an in vivo source of oxygen. The intravascular introduction of peroxide results in the formation of microbubbles of oxygen, a reduction which is dependent on the presence of catalase in the erythrocyte. The microbubbles of oxygen are more readily absorbed by the plasma and thus less likely to cause embolic phenomena. In animals with high blood levels of catalase, such as the human and

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cat, oxygen can be introduced into the vascular tree twice as rapidly in the form of hydrogen peroxide than as gaseous oxygen before producing gas emboli.^{3, 5}

The first report on the use of hydrogen peroxide as an extrapulmonary source of oxygen in the human was by Oliver and Murphy in 1920. They employed this agent for the treatment of terminal viral pneumonia. In 1948 Lorincz and associates investigated the therapeutic effectiveness of hydrogen peroxide given as a dilute solution and infused in the veins of several laboratory animals. They concluded that it was of little therapeutic value and commonly resulted in a depression of arterial pO_2 . Recently Feldman, Hoyle and Blackburn (1966) published their preliminary findings on the maintenance of cats without ventilatory function by the intra-arterial infusion of three percent hydrogen peroxide. Both Lorincz and Feldman mention embolic phenomena and methemoglobin formation as possible complications of hydrogen peroxide.

In view of these conflicting reports, it is difficult to assess the therapeutic value of hydrogen peroxide for the *in vivo* generation of oxygen during prolonged periods of pulmonary dysfunction. This present preliminary study was undertaken to evaluate the effectiveness of hydrogen peroxide in maintaining blood pO_2 levels in the dog and cat and thus determine if this agent is safe or effective as an extrapulmonary means of tissue oxygenation.

Materials and Methods

The study was carried out on a total of four mongrel dogs, (10 to 34 kg in weight) and five cats (averaging 3 kg in weight). The animals were anesthetized with sodium pentobarbital in a dose of 32 mg/kg by either the intravenous or intraperitoneal routes. Continuous heparization of all animals was maintained throughout the experimental period (1500 units/kg), which varied from four to six hours. Concentrations of 6%, 3%, and 1.5% hydrogen peroxide were prepared by dilution of a stabilized 50% Reagent Grade hydrogen peroxide solution using either 6% Dextran in saline or 5% glucose as the dilutant. An infusion withdrawal pump (Harvard Apparatus Co.) was used for the controlled infusion of the peroxide from a 50 cc syringe. Flow rates varied from 3.8 to 0.02 cc per minute; this would correspond to 3.8 to 0.07 cc of gaseous oxygen per kg per minute. The infusion of hydrogen peroxide was carried out continuously over periods ranging from several minutes to one hour. Infusion was via the femoral artery in all the dogs and two of the cats

while in the last three cats studied infusion was via the jugular vein while the femoral artery was used to measure the pO_2 . Continuous monitoring of the venous or arterial pO_2 was carried out by the use of a physiological gas analyzer (Beckman Instrument Co. Model 160), and recorded on a Bausch and Lomb VOM-7 Recorder at various intervals during the perfusion time. A constant blood flow to the gas analyzer module input was facilitated by a roller pump (Electro-Med. Co. Model AR-2) and a T tube overflow bypass to the module output. (Fig. 1) Electrocardiographs (Sanborn Twin Viso Recorder) and continuous visual cardiac monitoring (Sanborn Series 760 Oscilloscope) using the standard limb leads was obtained in half of the experimental animals. Blood pH or pCO_2 were not obtained. There was no attempt made at animal survival in this series.

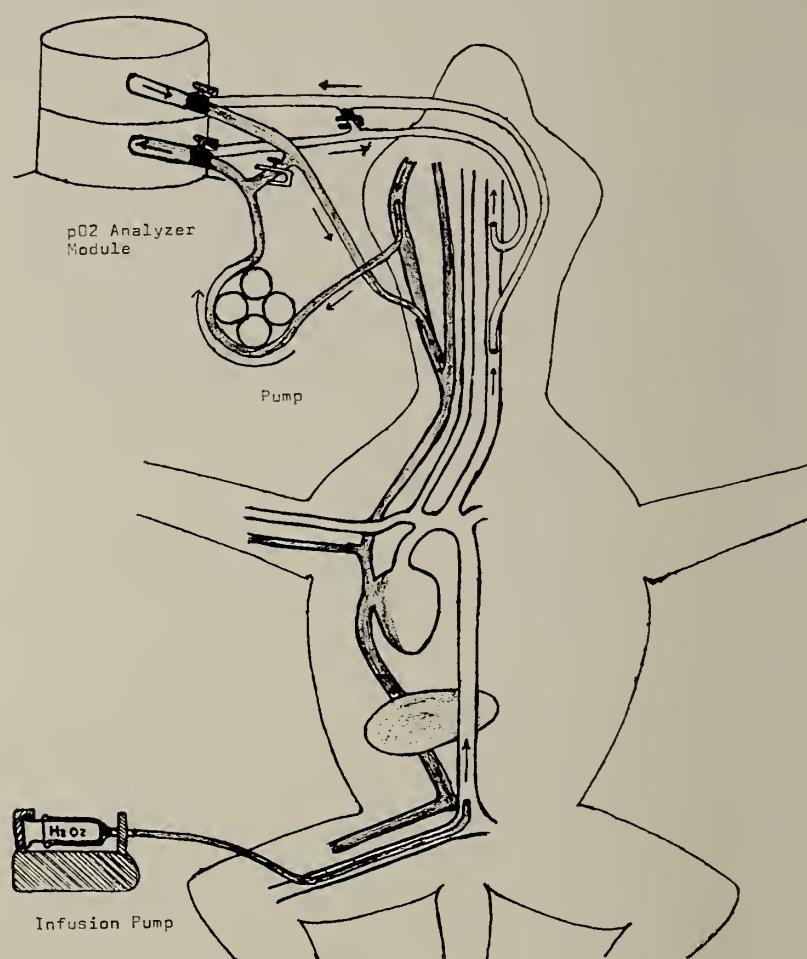


Fig. 1 Experimental Animal With Arrangement For Continuous Monitoring of Venous or Arterial pO_2 .

Results

In the dog infusion of hydrogen peroxide at flow rates of 3.8 cc of *in vivo* oxygen per minute per kilogram resulted in the production of massive embolic phenomena; froth was present in all cardiac chambers, the abdominal cavity became distended with gas, and gas bubbles could be observed in the dorsal vessels of the tongue during the course of the infusion. Gas emboli or cardiac tamponade were not detected when

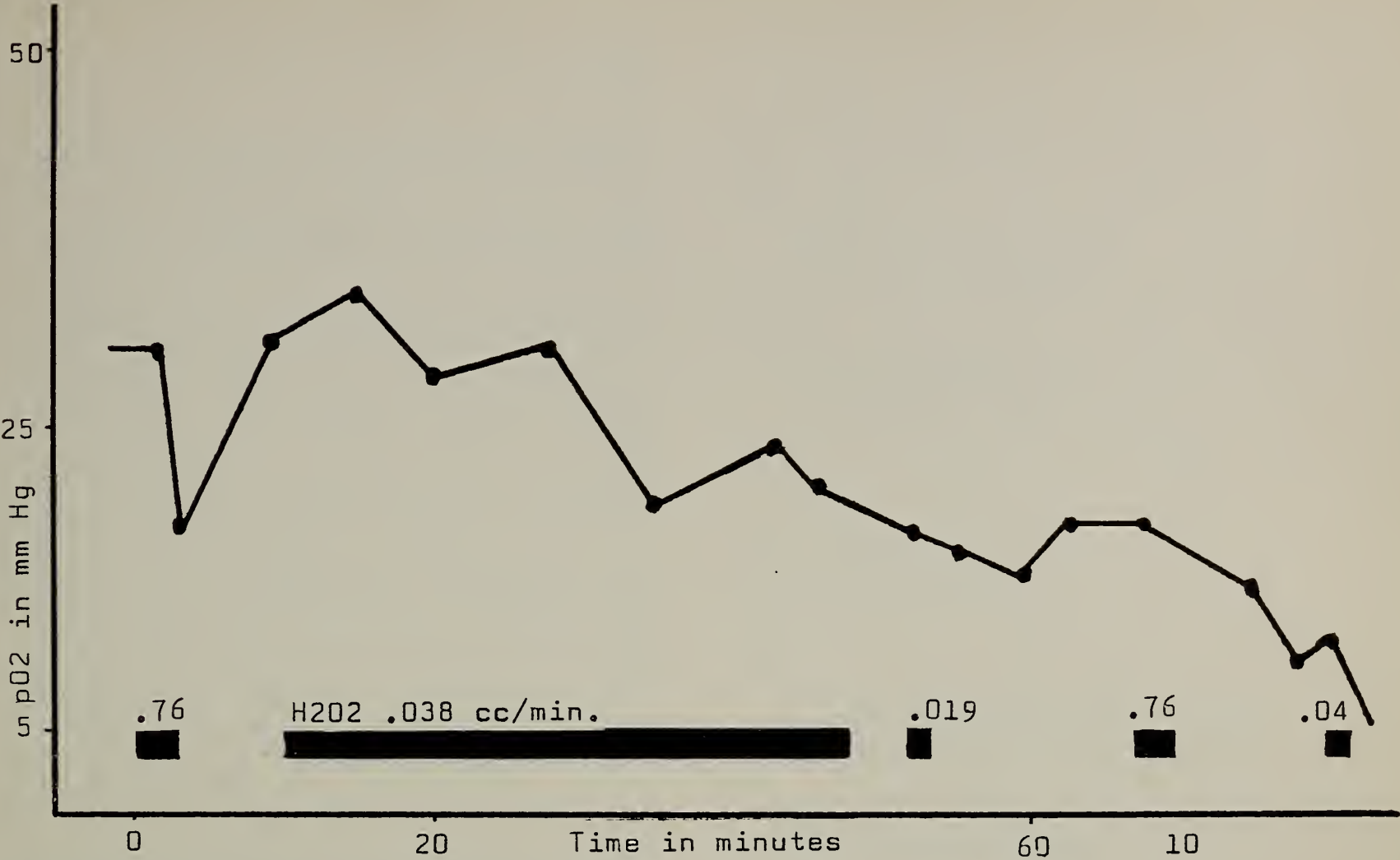


Fig. 2 Dog # 4 Infusion of 1.5% Hydrogen Peroxide in Dextran Via Femoral Artery. Measurement of pO₂ from Jugular Vein.

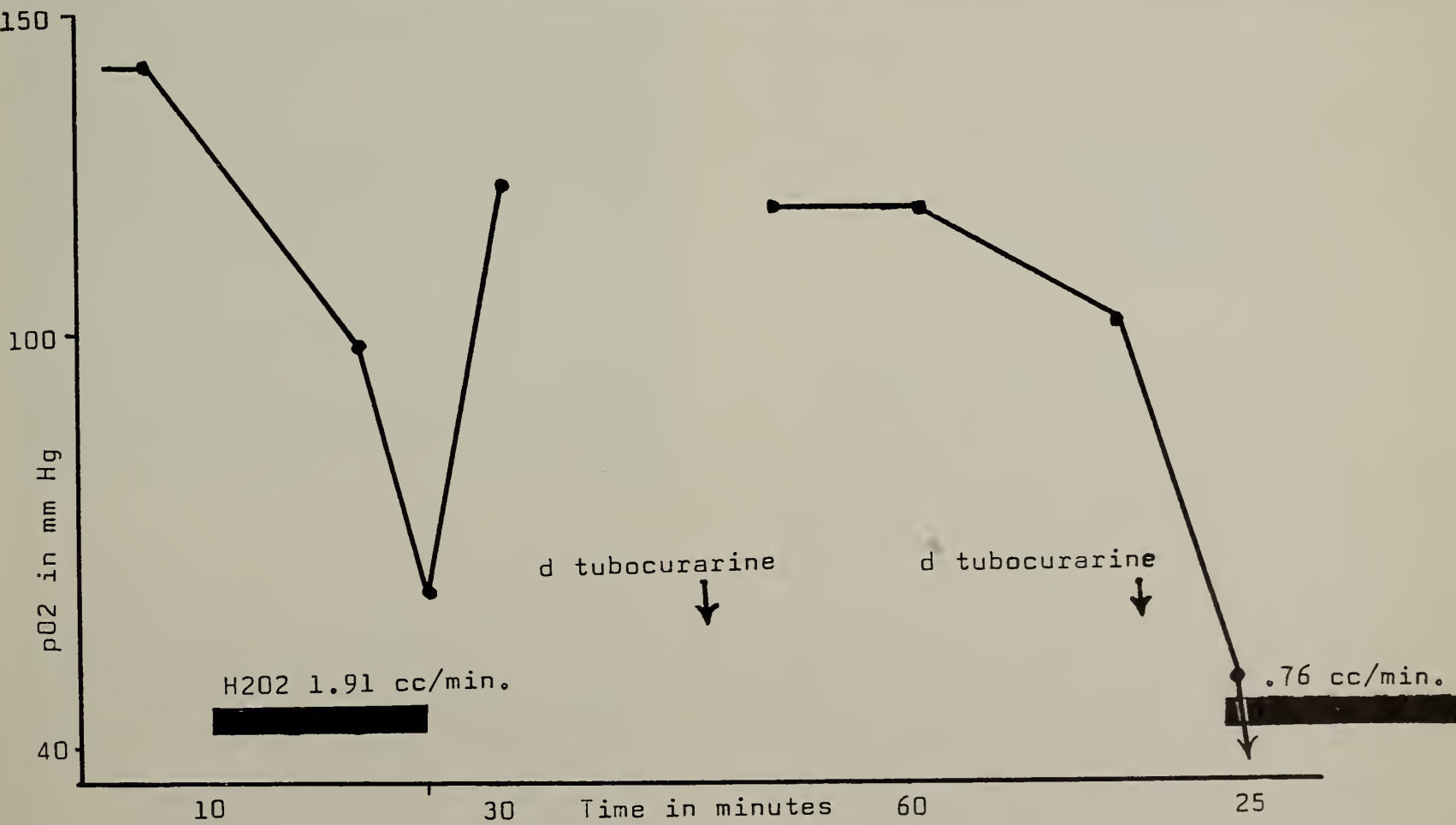


Fig. 3 Cat # 4 Infusion of 3% Hydrogen peroxide in Dextran Via Jugular Vein. Measurement of pO₂ from the Femoral Artery. The Effect of Ventilatory Arrest.

infusion rates were kept below the equivalent of 1 cc of generated oxygen per minute per kg. In the cat, in the presence of normal blood circulation, neither intravascular gas emboli nor cardiac tamponade was observed, despite infusion rates as high as 3.8 cc of oxygen per minute per kg.

In both animals a progressive, oscillatory, decline in the venous pO₂ was observed to occur within several minutes after the start of the hydrogen peroxide infusion in dilutions of 1.5 to 3% via the femoral artery. Interruption of the infusion resulted in a reversal of the venous pO₂ level to normal or near normal values within 10 to 15 minutes, provided the integrity of the circulation was not impaired. Animals whose arterial or venous pO₂ were below normal values before the infusion of peroxide was started experienced less of a decline in their blood pO₂ values than did those with normal values. The more dilute hydrogen peroxide concentrations, equivalent to 0.12 to 0.60 cc of oxygen per minute per kg produced on occasion a slight rise in the pO₂ but usually had no appreciable prolonged effect.

Infusion of hydrogen peroxide into the jugular vein, instead of the femoral artery, did not appear to influence the findings mentioned above as far as the pO₂ changes were concerned. Simultaneous measurements of both arterial and venous pO₂ showed both to undergo parallel changes in response to the peroxide infusion.

Hydrogen peroxide failed to reverse a sharp decline in the pO₂ values, or even maintain these values, in three animals in whom ventilatory arrest was accomplished by tracheal occlusion or by injection of d-tubocurarine chloride (Abbott).

Discussion

The decline in the oxygen tension of the blood seen in most of the animals following the infusion of hydrogen peroxide may be related to the formation of methemoglobin. Methemoglobin would reduce the hemoglobin mass available for conversion to oxyhemoglobin and depress arterial pO₂ values. In one of the dogs studied a transfusion of 250 cc of whole blood, during the time of infusion, promptly raised the venous pO₂ about 20 mm of Hg. Microembolic phenomena are probably not responsible for the reduction in oxygen tension, since gaseous oxygen would result in a rapid rise in pO₂ which would be detected at the electrode used in the continuous monitoring of the pO₂ blood values. Flow rates of 1 cc of generated oxygen per

minute per kg are capable of producing methemoglobin formation by intravascular hydrogen peroxide.⁵

The exact function of the enzyme, catalase, in cellular metabolism is not known; it probably functions as one of the mechanisms by which the erythrocyte is able to limit the oxidation of hemoglobin to methemoglobin by hydrogen peroxide.⁸ The human and cat erythrocyte have high catalase values while the erythrocyte of the dog is low in catalase content. This study would tend to support the findings of others^{3, 5, 8} that methemoglobin formation by hydrogen peroxide appears to be inversely proportional to the amount of catalase in the red blood cell. The catalase content of the cell is a species variant. Observations for methemoglobin in this study were based on the appearance of the peculiar "brown cyanosis" which occurred in the animals and not on spectrophotometric identification. On this basis methemoglobin formation was observed at flow rates considerably below those capable of producing gas emboli or cardiac tamponade.

In two of the animals a ventricular fibrillation was converted to a sinus rhythm by either intracardiac injection, or direct topical application to the heart of 3% hydrogen peroxide in dextran. Similar observations have been reported by Urschel¹³ and his associates in experimental animals and in the human by the intraaortic injection of a dilute solution of peroxide.

Conclusion

These studies do not support the therapeutic efficacy of hydrogen peroxide as an in vivo source of oxygen for the maintenance of arterial pO₂ during periods of pulmonary insufficiency. This powerful oxidizer is toxic, and appears to be neither efficient nor safe for use as an extrapulmonary source of oxygen in the treatment of infants with the respiratory distress syndrome.

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The Court-Martial of Captain Levy: Medical Ethics v. Military Law

Columbia, South Carolina. The courtmartial of Captain Howard B. Levy rested on a large area of agreement between the defendant and the Army. The Army said that Levy, a young dermatologist, refused an order to train members of the Special Forces in dermatology; Levy is proud of his refusal. The Army said that Levy told enlisted men that the war in Vietnam is wrong and that Negro soldiers should not fight in it; Levy says that this is so. The Army said that Levy called the Green Berets "liars and thieves and killers of peasants and murderers of women and children"; Levy says "They are." The Army said that Levy wrote a letter to a career sergeant in Vietnam — a white man married to a West Indian Negro—saying, "The same people who suppress Negroes and poor whites here are doing it all over again and you're helping them. Why?"; Levy says "It was a damned good letter." The chasm between the government and the defense on the ethical and constitutional issue raised by the case — Captain Levy's right to speak and act as he did — is enormous. But there is no question that the government has the right man.

Levy's educational biography would make the proverbial "Jewish mother" proud. Son of a Brooklyn salesman, he went to New Utrecht High School and New York University. He took his medical training at the Downstate Medical Center, interned at Maimonides Hospital, and returned to NYU for a residency that included work at University Hospital, Manhattan Veterans Hospital, and Bellevue.

His political biography is another matter, a tale of simultaneously increasing involvement and alienation that mirrors the experience of much of his generation. His early political views, as he now recollects them, were conventional, bordering on conservative. But he became affected by what he saw in the hospitals, the poverty that afflicted his welfare patients, the class and racial conflicts that he saw reflected in the medical system under which they were treated. He began to read in the field of politics, to sample the political offerings of the

left. Gradually he became more active: he began to write letters to editors and congressmen; he picketed with welfare workers during a strike in New York City. Levy was commissioned a reserve officer in the Army Medical Corps, under the Berry Plan, in 1962 and was deferred for the duration of his residency. By that time he was profoundly opposed to American policy in Vietnam. He would have preferred to become a conscientious objector, but he is not a pacifist and the law provides no relief for opponents of individual wars. He convinced himself that standing armies are necessary and that, since they are necessary, they need doctors. In July 1965 he entered active service and was sent directly to Fort Jackson.

For Howard Levy, the "doctor's draft" was a draft to the stockade. He was assigned to Fort Jackson without even the 6-week orientation course customarily offered drafted physicians at Fort Sam Houston in Texas, Fort Sam being overcrowded because of an influx of June graduates. Levy had considerable difficulty with both the forms and substance of Army life. He refused to join the officers' club on the grounds that he did not like golf, tennis, swimming — or officers — and was rewarded for this aberrant behavior by a security investigation that eventually contributed heavily to his court martial. He never mastered the salute, the proper wearing of the uniform, or a number of minor base regulations. He had difficulty responding to the concept of rank, including his own, and said what he thought about the war and civil rights to anyone, from patients to enlisted men to officers, with whom he came in contact in or outside the dermatology clinic of which he was chief, in or out of uniform. He lived off the base and spent his spare time working in a civil rights project, a voter-registration drive; for a time he published a civil rights newspaper. His friends were drawn from the small population of Negro and white political activists in Columbia and surrounding towns.

At some point during his stay there this improbable candidate acquired responsibility for providing medical training to members of the Special Forces called "aidmen." According to testimony by a number of Army physicians, Fort Jackson's participation in the medical pro-

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gram was somewhat desultory; physicians being asked to supply training in their specialties were never instructed how to proceed or told what should be covered. A number of aspiring Green Berets would simply show up for 5-day stretches in the various clinics and then disappear. For a while Levy accepted the teaching function: "I would talk to them, tell them what I was doing, and try to get them to recognize certain simple, basic conditions and to learn what to do about them," Levy said in an interview with **Science** last week. "Then, gradually, I began to realize the implications of what I was doing. Finally, I just stopped."

Levy's unilateral strike against the Special Forces came in due course to the attention of the commander of the hospital, Colonel Henry F. Fancy. Fancy, a career officer, knew that Levy was considered a "security risk." He called him in, pointing out that he — Fancy — had a job to do that required Levy's participation. Levy said he would not train the aidmen, that it violated his ethical principles to do so. When Levy continued to refuse, Fancy issued him a written order; when he failed to respond to that, Fancy began to initiate punishment. Originally, Fancy testified at the trial, he contemplated only a mild rebuke, an administrative reprimand. Later, evidently influenced by further contact with intelligence officers and by his conviction that Levy was, as he described him, a "pinko," he elevated the charges to the courtmartial level.

Originally, two charges were preferred: disobeying a lawful order and attempting to promote "disloyalty and disaffection among the troops" by statements about the war to various enlisted men. Another charge based on speech was added later: "making intemperate, defamatory, provoking and disloyal statements" to Special Forces personnel while in uniform. Still later, during the course of a preliminary hearing, the government added two more charges based on the letter to the sergeant in which Levy had argued against participation in the war. These charges were that writing such a letter was "conduct unbecoming an officer and a gentleman" and that it represented an attempt to "interfere with, impair and influence the loyalty, morale and discipline of the military forces." Additional charges raised the stakes again, increasing possible penalties to a prison sentence of 11 years.

In the final minutes of the trial, which ended 3 June, the charges based on the letter were thrown out because of a technical error in their

formulation that occurred when the court attempted to find him guilty of a lesser offense than that written in the initial charge. But Levy was convicted on the first three charges and sentenced to 3 years at hard labor. He was handcuffed by the executive officer of the hospital, a deputy of Colonel Fancy, and taken to the stockade. There is no bail in military law, and the initial attempts by his lawyers to obtain a "commandant's parole," by which he could remain free pending appeals first to military and later to civilian courts, were unsuccessful. His chief defense counsel, Charles Morgan, Jr., of the American Civil Liberties Union (ACLU), estimates that the appeals may run almost for the duration of the sentence. If the lawyers fail in efforts to win a parole from Secretary of the Army Stanley Resor, Levy will spend the next 3 years in confinement — either in the stockade, or in the Fort Jackson hospital to which he was moved later in the day of his arrest, or in Leavenworth. Pending initial review by the base commander, Levy is still treated as an officer. The "hard labor" aspect of the sentence will not take effect until he is officially stripped of his rank.

The court-martial, while it lasted, was many things — a money-maker for Columbia motels, an event in the life of the "peace movement," an agony for the captain's parents. It was a "little Nuremburg," briefly, when the presiding law officer, Colonel Earl V. Brown, permitted the defense to argue that, under the Nuremburg precedent, Levy's disobedience was lawful because the order he was commanded to obey committed him to participation in "war crimes." Brown ruled that no "pattern" or "policy" of war crimes committed by the Green Berets was shown, and that therefore it could not be used as a defense; he nevertheless established the precedent that the Nuremburg test could be used in American courts. It was a maze for the civilian lawyers, a perpetual Catch-22, at moments such as Brown's ruling that the truth of Levy's statements was irrelevant to his defense.

The trial brought into the open an undercurrent of anti-Semitism. The Army was seemingly at pains not to develop a Dreyfus, sending a Jewish captain from Fort Gordon, Richard Shusterman, to prosecute the Jewish captain from Fort Jackson. The South Carolina papers were not so discreet, one of them suggesting that a New York group endorsing Levy was dominated by Jews, and wondering "if they would likewise admire a refusal to 'cooperate

with our government's war' if U. S. forces were dispatched to Israel instead of Vietnam." Both sides received anti-Semitic mail.

Issues for Doctors

But, with all their attendant barbarisms, the proceedings against Captain Levy raised some major ethical and constitutional questions. Some of these — the freedom to speak out on matters of conscience, the conflict between civilian freedom and military law — have relevance universally. But the violent juxtaposition of military and medical traditions that characterized the trial also opened new questions of particular significance for physicians.

The basic constitutional question, apart from the free speech issue, is whether a physician has a right to refuse an order that violates his ethical principles. The ethical precepts of a physician are not protected by existing law as are some aspects, for example, of religious belief. As a result, "medical ethics" were ruled out by Colonel Brown as a defense against Levy's refusal to obey the order. But the question did come into litigation for the first time during the trial, and it is a major point on which the ACLU will base Levy's appeal.

The substantive issue is the role of medicine in military service. Traditionally the military has kept separate its wounding and its healing functions, a separation rooted in both sociology and pragmatism. What is meat for the military — command, obedience, reliance on authority, willingness to kill — is not easily reconcilable with the healing arts. Within the Army organization, physicians, both draftees and career officers, have special status. Doctors may attain high rank but they do not command men; draftees do not go through a basic branch course such as armor or infantry as even other professionals, such as lawyers, are required to do; regulations provide that, if the officers of a unit become unable to exercise command, the highest-ranking enlisted man takes precedence over the medical officer. The Army has not necessarily learned to love its doctors, but it has at least devised ways to accommodate to the traditions of their profession. On the battlefield, medics have noncombatant status certified by international law. In theory, medical installations have also been protected from bombardment or attack.

The Special Forces program for which Levy was asked to provide training violates these traditions. Special Forces aidmen are not medics in the conventional sense; each is a member of a 12-man detachment, called an A-team,

trained to conduct guerilla warfare or counterinsurgency operations behind enemy lines. The mission of the teams, according to Army **Manual FM 31-21, Special Forces Operations**, is to "develop, organize, equip, train, and direct indigenous forces in the conduct of guerilla warfare and to advise, train and assist host country forces in counterinsurgency operations." Each team has two medical aidmen, both of whom are "cross-trained" in another specialty such as intelligence or demolition; the aidmen take regular turns on combat patrols.

One function of the aidmen in Vietnam is to care for members of their own detachment and of the units of Vietnamese irregulars they direct. It is not a matter of mere solicitude. "During combat," the manual states, "the guerillas are more likely to take . . . personal risks . . . knowing that if they are wounded they will be given proper medical treatment." In unconventional warfare, it continues, "the health of the guerilla assumes an ever greater significance . . . A rigorous program of preventive medicine, to include personal hygiene and field sanitation, must be initiated . . . The maintenance of a balanced diet may be a problem and have a direct effect on the health and stamina of guerilla personnel."

An additional function of the aidmen is even more political — supplying medical care to the local population as a means of winning their allegiance. This objective is no secret. Colonel Richard Coppedge, an Army physician who was one of the initiators of the program, testified that it was central to the concept of guerilla warfare. "Guerilla warfare is a social struggle," he told the court, "and it requires use of social instruments such as medicine." The field manual is equally frank, describing medical service as an operation "initiated primarily for its psychological effects." For Coppedge, however, it is not just a matter of the military using medicine; it is also, he testified, a "peculiarly American approach," a matter of "medicine using the military," attaching itself to military units in remote areas where services are poor or nonexistent, a kind of medical missionaryism. (Ironically, Coppedge told the court that Levy was precisely the kind of physician the Special Forces need, because "he is interested in society," and an Army psychiatrist said that Special Forces men have a great deal in common emotionally with civil-rights activists.)

Whether medicine thus practised is capable of influencing the "hearts and minds of the people" is an open question. It is medicine with

strings, penicillin with bayonets; it is the paradox that bothered Howard Levy: in his words, "Kill, kill! Cure, cure!" Presumably the recipients are also aware of the paradox and ready to turn it to their own purposes: one theorist on guerilla warfare recently wrote that, in some areas of Vietnam, the Viet Cong are so secure that they encourage their followers to make use of the free medical and social services offered by the Americans.

The medical impact of guerilla medicine is equally uncertain. Aidmen are trained in medical matters for 37 weeks. They are shipped off to isolated areas where they have only limited and sporadic contact with more fully trained medical authorities. They are armed with a battery of drugs and equipment for minor surgery. Exactly what happens in the field was impossible to learn from conflicting testimony at the trial. There was testimony that the aidmen were restrained and that they were reckless; that they were shoddy and that they were competent; that they did "a little bit of good," that they did "a lot of good," and that they did harm. There was testimony that they functioned without visible connection with higher authorities, and testimony that they were fairly well supervised; that they practised recognizable standards of medical ethics, and that they did not; that they helped to create administrative structures for public health in the provinces, and that they contributed to destruction of those structures. But there was no conflict about the central point: that medicine was being subordinated to political and military objectives, or about its practical implications — that aidmen could be ordered to offer treatment as a bribe for information or cooperation; that they could be ordered to abandon patients and move on.

This was the system in which Howard Levy refused to participate. He is opposed to the political use of medicine, as well as to the particular politics that it is being used to support in Vietnam. From a medical point of view, he is concerned about possible long-term hazards: "Medically, I think they do more harm than good," he commented to *Science*. "They go into a village, set up a station, hand out drugs indiscriminately. Penicillin will cure a lot of things but there are conditions it doesn't affect, and it has dangerous implications in the long run, both for individuals and for its effect on the development of drug-resistant strains. Physicians should be concerned with this changing medical ecology. The Special Forces have access

to the whole pharmacopeia," he concluded. "They use drugs, such as Chloromycetin, that I hesitate to use myself."

Levy is not alone in his opposition to the program. Army physicians testified that it ran into considerable opposition when first established in the 1950's, partly because of opposition in the regular Army to the unconventional Special Forces in general, partly on the ethical and practical grounds raised by Levy. His position was supported, at the trial, by several other drafted physicians from the Fort Jackson hospital, support for which they consciously risked the displeasure of the same officer who court-martialed Levy. In addition the Fort Jackson courtroom was for 1 day turned into a remarkable ethical-intellectual forum as the defense brought out well-known representatives of American medicine and public health to testify in the captain's favor: Jean Mayer and Victor Sidel of Harvard, Louis Lasagna of Johns Hopkins, and Benjamin Spock of Western Reserve.

The core of their testimony was that, first, as a physician, Levy's primary duty is to his own interpretation of the ethical codes that govern medicine; that, second, the historic separation of military from medical functions had practical as well as ethical roots; and that, third, they would have grave doubts about training Special Forces themselves, as long as the program implied the paramountcy of military-political judgments. "Even if the Special Forces aidmen do a little bit of good?" they were asked by defense counsel Alan Levine. "The risk to the independence and status of medicine rarely comes from people who want to hurt medicine," Mayer replied. "The long-term advantages of independence so far outweigh the immediate gains that I would not do it. Anything that makes medicine backslide into an agent of any ideology is bad for medicine." "There are situations," according to Sidel, "in which the short-term effects may be good but may lead to deleterious consequences. You can't just run in without a thought for the long-term implications." Saying the Special Forces "do some good" is "trying to make the ends justify the means," Lasagna said. "I just don't believe the gains are worth the losses to the ethical core of medicine or to the realistic supplying of medical care on the battlefield." Like Mayer, he argued that the political use of medicine by the Special Forces jeopardized the entire tradition of the noncombatant status of medicine. The four agreed with Levy that a physician is responsible for even the secondary ethical implications of

his acts: that he must not only act ethically himself but also anticipate that those to whom he teaches medicine will act ethically as well.

The prosecution took a turn at ethics, too. William DeMaria of Duke University endorsed the Special Forces program, arguing that he would not be responsible for what aidmen did after he had trained them; he testified that there are occasions on which military orders should take precedence over medical ethics. Another prosecution witness, North Carolina practitioner Amos Johnson, a former head of the American Academy of General Practice, was asked, on cross-examination, whether he thought the training of medics who were also combatants raised any ethical issues. "Let me ask you a question," Johnson responded. "Do they operate under the Geneva convention?" Told to assume that they did not, Johnson replied, "Then it doesn't bug me at all." (The practice of marking Green Beret aidmen with the red cross varies in Vietnam; some carry marked ID cards, and others do not; none evidently carries any external symbol.) "If I were the enemy," Johnson continued, "and my medical care wasn't too good, I'd rather have this person shoot me, because if he doesn't kill me then a few minutes later, if he captures me, he may be using his medical skill to save my life."

The Army also took the paradoxical tack of trying to make Levy look like a reactionary, implying that he was against the training of paramedical health personnel to serve as physicians' assistants. Neither Levy nor those who testified for him are opposed to such training. But "in civilian programs, paramedical personnel are always agents of the doctors," Mayer pointed out. "They are not, for example, ward captains."

How can a military court plausibly adjudicate these issues? For the defense it was a question of individual responsibility. For the government it was a question of military order. In the context of Fort Jackson, where formations of trainees were marching outside the courtroom, running, shouting, firing their weapons, and going through bayonet drill, such an assertion of individuality seemed improbable, and the questions of conscience on which it was based seemed remote. To the ten combat officers who courtmartialed him, Howard Levy was simply a disobedient and seditious officer. To those who observed him out of khaki he seemed an intense political activist, a sober physician, and above all a quintessential civilian. The most un-

settling thing about Howard Levy's trial was the fact that a system over which he had no control, whose purposes were not his purposes, and whose values were not his values had sufficient power to put him in jail for committing crimes that to him were the opposite of crimes.

—Elinor Langer

BLUE SHIELD TESTIFIES ON SOCIAL SECURITY AMENDMENTS

A study of the feasibility of utilizing private carriers in the purchase of needed health care coverage for persons who cannot afford it under Title XIX programs was suggested in Blue Shield's testimony before the Senate Finance Committee on the Social Security Amendments of 1967 (H.R. 12080). Ira C. Layton, M.D., vice chairman, board of directors, National Association of Blue Shield Plans, said that such an approach "could dramatically change the concept of providing health care for the needy and medically needy of this Nation. We are convinced that this would effect significant economies; simplify administrative procedures; and bring the needy back into the mainstream of society in the provision of health care."



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FEBRILE AGGLUTINATION TESTS

During febrile illness of unknown origin, agglutination tests on the patient's serum may yield information of diagnostic significance to the physician.

The antigens used in the febrile agglutination test are whole bacterial cell antigens that detect, or exclude, antibodies to such diseases as typhoid, paratyphoid, brucellosis and certain rickettsial infections. Tularemia antigens may or may not be included in the series.

The Salmonellosis: More than two-hundred serologically distinct species of **Salmonella** are known to infect man. Because many of these species share grouping antigens (somatic, or "O" antigens), the task of screening patients' sera for **Salmonella** agglutinins may be accomplished by testing with a limited number of group-representative antigens (Groups A through E). With the possible exception of typhoid fever, a significant titer indicates only that a **Salmonella** infection has occurred, not which specific organism is involved. The identification of the species of the infecting organism can be accomplished only by culture methods.

Because of the many variable factors in agglutinin titers, there is little that can be said of individual determinations. Low-grade concurrent infection, continual exposure to **Salmonella** antigens present in a restricted population, or previous vaccination for typhoid and paratyphoid organisms may cause a non-infected individual to develop and maintain an abnormally high titer for these, or related, antigens.¹

Generally, "O" titers of 1:80 are considered suspicious while those of 1:160 or above usually indicate infection. Negative titers may be contributory in that they provide a base line for future studies or, when encountered late in febrile illness, may serve to rule out **Salmonella** infection. Since group-specific agglutinins appear no earlier than the seventh to tenth day of illness, many patients will be seen and tested before an immunologic response has occurred. For this reason, a follow-up agglutination test

ordered at least seven days after the first serum was drawn will frequently be significant because it will demonstrate the all-important rise in titer. If this is the case, when a rise in agglutinin titer is demonstrated and when clinical signs established for the disease are present, the diagnosis of salmonellosis is confirmed.

Three typhoid fever antigens are used: the group, or somatic antigens (typhoid "O"), the flagellar antigen (typhoid "H"), and the Vi antigen. Agglutination with the Vi antigen is more specific for typhoid than either "O" or "H" antigen. An "O" titer of 1:80 is suspicious and titers of 1:160 and above usually indicate infection. Titers to the flagellar antigens are usually lower than those of the "O" antigens with titers of 1:40 being suspicious and 1:80 or above indicative of infection. Agglutinins for flagellar antigens appear in the serum later in the course of the disease than do the group agglutinins. Following vaccination, both "O" and "H" titers are elevated. The elevated "H" titer usually persists for one or more years.² The Vi antigen is so named because of its association with the virulent typhoid bacillus. This is a specific antigen of typhoid and while titers are always low, when present, they are specific and indicate either infection with the typhoid bacillus or the carrier state.

Tularemia agglutinating antibody can be demonstrated in the serum during the second week of infection. A titer of 1:80 is thought to be significant although, as the disease progresses, this may rise to 1:2560 or higher. Frequently, persistent titers as high as 1:160 are encountered in a patient in the absence of infection. This can indicate past infection and recovery. Tularensis antibody is one of the few antibodies that may persist for life following recovery from the disease. Whenever positive agglutination tests for brucellosis or tularemia are encountered, both should be repeated since antibody formed during disease caused by either of these organisms will frequently cross react with the other. However, titers for the specific disease will usually remain considerably higher.

Brucellosis: Brucellosis antibodies usually appear in the serum two to three weeks after infection and ordinarily reach a peak titer by the sixth week. They may fall rapidly and disappear completely while the patient is still sick. Since the clinical symptoms of human brucellosis are rarely diagnostic, and since cultural attempts to isolate the causal organism fail more often than they succeed, much of the weight of diagnosis rests on demonstrating agglutinins in the pa-

tient's serum. Titers of 1:80 to 1:160 are firmly indicative of past or present infection. Lower titers, if shown to increase, are frequently diagnostic if the presence of other intercurrent illness can be ruled out. A borderline titer should always be questioned, since once antibody is present in the serum it may sometimes be detected years after recovery from the original infection.

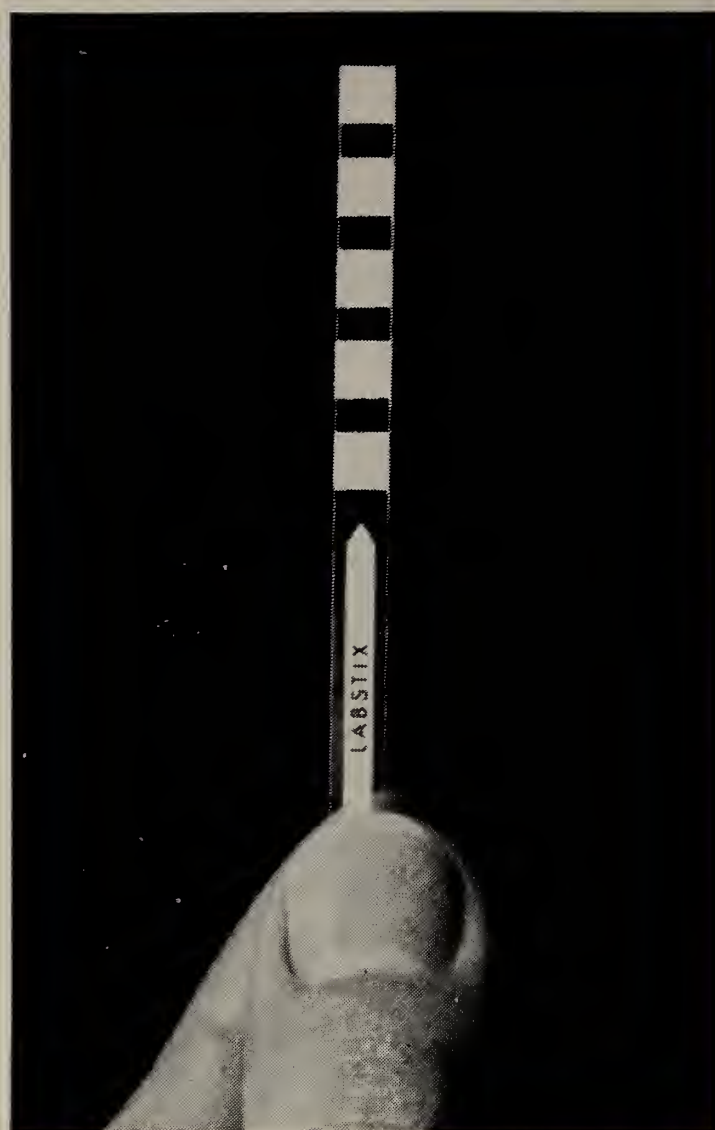
The antigen used in the test consists of killed **Brucella abortus** cells. Because the three species of **Brucella** cross react, only one proven antigenic strain need be used. Quite often, it is necessary to use other procedures (Opsonocytophagic index, skin test) to aid in diagnosing chronic brucellosis.

Typhus fever and Rocky Mountain spotted fever agglutinins are determined by using **Proteus** strain OX19 (Weil-Felix reaction). In both diseases, agglutinins are demonstrable by the seventh to tenth day of disease and reach a maximum titer by the end of the second week. Titers in the 1:40 to 1:80 range are suspicious, while those of 1:160 or above indicate infection. **Proteus** OX19 agglutination does not differentiate between epidemic or endemic typhus or Rocky Mountain spotted fever.

Two additional **Proteus** antigens, OXK and OX2, are available. **Proteus** OXK agglutinins can be demonstrated in patients with scrub typhus. However, this disease is not a problem in North America. **Proteus** OX2 agglutinins may be detected in spotted fever patients. Rarely, they may be present in higher titer than agglutinins for **Proteus** OX19.

There are many factors which serve to prevent the establishment of "normal values" for the interpretation of febrile agglutination tests. However, test results may give valuable information to the physician if he is cognizant of the following:

1. "Normal" titers are affected by recent vaccination, unrelated concurrent infection, individual antibody response, and even the particular manufacturer's antigen.
2. The demonstration of an increasing antibody titer always is more significant than a single elevated titer.
3. The stage of disease during which serum was tested — if the disease is of short duration for example, **Salmonella** agglutinins may not be detectable until after recovery of the patient.



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*Blood; ketones; glucose; protein, and pH.

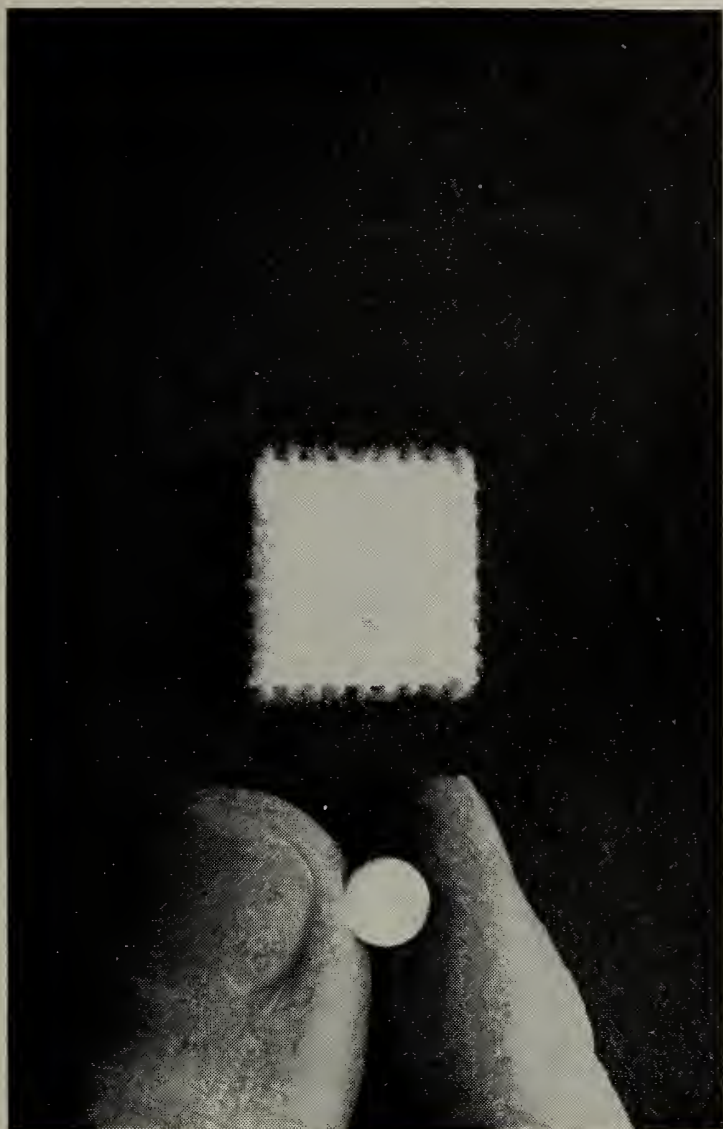
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REFERENCES

1. Smith, D. T., Conant, N. F., and Overman, J. R. **Zinsser Microbiology**, 13th Ed., 1964. Appleton-Century-Crofts, New York.
2. Rivers, T. M., and Horsfall, F. L. **Viral and Rickettsial Infections of Man**, 3rd Ed., 1959. J. B. Lippincott Company, Philadelphia.

NEW MEDICAL SCHOOLS

Five new medical schools opening this fall pushed the number of U. S. schools to 94, with a combined first-year enrollment of an estimated 9,280 compared with 8,964 last year, according to the American Medical Association. Eleven other new medical schools are in the development stage. By the mid-1970's it is expected that U. S. schools will be graduating approximately 10,000 medical students annually. Total medical school enrollment last year was 82,835, and this year is expected to exceed that figure.

U. S. DRUG SPENDING

The average American spent \$21 on drugs and medications during 1964-65, according to a survey conducted by MODERN MEDICINE magazine. Prescriptions accounted for \$15.40. Persons in the over-65 age bracket spent an average of \$50.20, including \$41.40 on prescriptions.



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THE MONTH IN WASHINGTON

The American Medical Association urged that Congress precisely define "public health services" to prevent the so-called "Partnership in Health" legislation being used as authority for unlimited expansion of government medicine.

In a letter to Chairman Lister Hill (D.-Ala.) of the Senate Committee on Labor and Public Welfare, Dr. F. J. L. Blasingame, executive vice president of the AMA, said:

"We are especially concerned with a lack of definition with respect to comprehensive public health services. Neither 'comprehensive' nor 'public health services' is defined in the law or the bill. While we recognize there is supportable advantage in removing strict categorization of grant funds, we are concerned that the categorical identification having been removed, there will no longer be any limitation on the health care which may be provided. Indeed, from testimony on this legislation by government officials, it would appear that our concern is justified. Is it the intent that the Congress is authorizing a program of **individual treatment for unidentified patients for unspecified conditions for unlimited services?** It is clear that the lack of definition of 'public health services' is, in effect, an invitation from Congress to unlimited expansion of 'public health' beyond its traditional role in the community.

"The AMA has supported, and continues to support the furnishing of public health services. We have also supported flexibility of operation within the state and local health departments as an effective tool for community health. We feel, however, that the distinction between the public and private health sectors should be delineated . . . in more positive terms than the mere prohibition against interference with the existing patterns of private professional practice. . . . Accordingly, the Association finds itself unable to support this portion of the legislation providing for an undefined program of comprehensive public health services."

The AMA also opposed a provision for federal licensure of clinical laboratories on the ground that licensing of such facilities traditionally has been a state matter.

"We believe that federal licensure of these facilities would establish an undesirable precedent," Dr. Blasingame said.

The controversy over generic vs. brand name drugs was aired at hearings of the Senate Finance Committee and the Senate Small Business Monopoly Subcommittee.

Chairman Russell B. Long (D., La.) of the Finance Committee planned to offer an amendment to the Social Security bill, which includes medicare and medicaid changes, to put the emphasis on generic drugs in government medical programs. The monopoly subcommittee, headed by Sen. Gaylord Nelson (D., Wis.), was investigating drug pricing policies with the same objective as Long's proposal.

Long's proposal included the creation of a federal panel to select the highest quality but lowest cost prescription drugs for which patients would be reimbursed under government medical programs.

Both the Food and Drug Administration and the drug industry opposed establishment of such a committee and national formulary of drugs.

FDA Commissioner James Goddard, M.D., said it would result in "an encroachment on the practice of medicine in such a way that I believe the physicians of this country would rise up in wrath." He also said:

"In essence the bill would impose upon the formulary committee the duty of evaluating every prescription drug used in medical practice today — more than 5,000 — and of providing a formulary of the drugs of choice. I would have to exclude drugs deemed unnecessary, therapeutically duplicative, or of unacceptable quality. The enormity of such a task should be borne in mind."

C. Joseph Stetler, president of the Pharmaceutical Manufacturers Association, joined Goddard and John W. Gardner, Secretary of Health, Education and Welfare, in urging that action on the matter be postponed until a report is made on a special study being conducted by HEW. The report is due Dec. 1.

Stetler said the drug industry recognizes the government's responsibility to control federal expenditure in its drug purchase programs. But, he said, Long's proposal would put such a low ceiling on drug prices that it would "jeopardize the ability of quality, research-oriented pharmaceutical companies to perform effectively."

"The health of all of us and of future generations is dependent on the continued growth and vitality of a progressive and successful pharmaceutical industry," he said.

* * * *

* * * *

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No other national health problem has been so seriously neglected as alcoholism, according to John W. Gardner, Secretary of Health, Education and Welfare.

"The atmosphere of moral disapproval surrounding the entire subject, and the deplorable custom of treating alcoholics as sinners or criminals have obscured the nature of the problem," Gardner said in connection with a report issued by the National Institute of Mental Health.

The NIMH report, titled "Alcohol and Alcoholism," reviews present knowledge of alcohol, the nature and extent of drinking problems; the identification, treatment and prevention of alcoholism, and the status of current research.

Although alcoholism obviously does not occur without alcohol, the report states that "alcohol can no more be considered the sole cause of alcoholism than marriage can be considered the sole cause of divorce, or the tubercle bacillus the sole cause of tuberculosis."

On the treatment of alcoholism, the report says:

"In the past, alcoholics have been admonished, scolded, denounced, jailed, beaten, ducked, lashed, and threatened with eternal damnation. There is no evidence that any of these measures has had significant therapeutic value for more than an occasional alcoholic. Available evidence seems to demonstrate that long-lasting results can be achieved primarily by a technique known generally as psychotherapy."

* * * *

The federal government is planning on increasing the monthly medicare insurance rate for physicians' services for next year and 1969.

The present rate is \$3 a month. The medicare law designated Oct. 1 as the deadline for setting the rate for 1968 and 1969 but Congress approved legislation postponing the announcement until Dec. 31.

John W. Gardner, Secretary of Health, Education and Welfare disclosed a possible increase from \$3 to \$4 in a letter to Sen. John J. Williams, Del., ranking GOP member of the Senate Finance Committee.

The monthly premium is paid by persons 65 and older who elected to get benefits under Part B of the medicare program providing physician services.

"I would promulgate a rate of \$3.80 for the two-year period of 1968 and 1969, 25 cents of the

increase being based upon our evaluation of the extent to which we believe the premium rate was below the actual cost for 1966-67 and 55 cents being the estimated additional cost to be expected from an estimated increase in utilization and in physicians' fees," Gardner said.

FIRST INTERNATIONAL CONFERENCE ON PREMATURITY

The First International Conference on Prematurity, sponsored by the AMA Committee on Maternal and Child Care, will be held January 11-13, 1968 at Pier 66, Ft. Lauderdale, Florida.

An open invitation to attend is being extended to the chairmen and members of all state and county Maternal and Child Care, Infant and Perinatal Mortality Committees; State Health Department Directors of Maternal and Child Health; medical school faculty members in Departments of Obstetrics, Pediatrics, Preventive Medicine and Public Health. Other physicians and representatives of groups interested in the problems of prematurity from throughout the world, are also cordially invited to attend.

The program has been planned around three morning sessions to explore the problems of Prematurity in depth with particular emphasis on obstetrical prevention and pediatric intervention with the ultimate objective of reducing perinatal losses. International speakers will discuss patterns of prematurity, mortality and morbidity factors, pathogenic implications, and national and international newborn programs.

Those interested in receiving additional information about registration for this Conference are requested to write Wesley J. Duiker, Secretary, Committee on Maternal and Child Care, American Medical Association, 535 North Dearborn Street, Chicago, Illinois 60610.

MD HOME AND OFFICE VISITS

Sixty-five percent of the U. S. population saw a physician at least once during 1963, according to the Health Information Foundation. Blue Shield's future expansion into the area of home and office coverage need not include the entire range of services in view of the fact that most Plans already provide coverage for outpatient surgery, accident care, and diagnostic x-rays and examinations. A number of Plans are developing additional types of home and office visit coverage.

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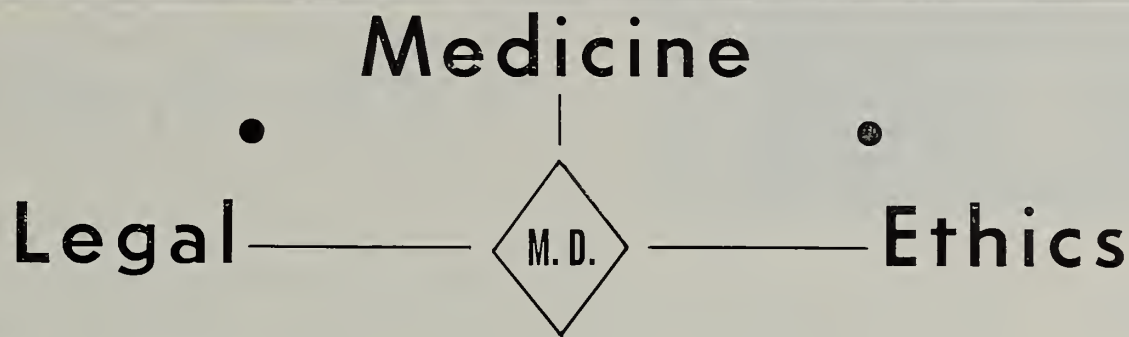
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\$1,238,514 DAMAGES AWARDED FOR PARALYSIS FOLLOWING SURGERY

A California trial court jury awarded damages of \$1,238,514 to a patient who has been paralyzed from the waist down since an operation in 1965 to correct a spinal cord condition. The suit was against a hospital and seven physicians and charged that they were negligent in the performance of the operation and in their postoperative care. The patient has undergone two operations since the one from which her paralysis resulted. The patient had asked for damages of \$2,500,000.

* * *

PHYSICIAN NOT GUILTY OF FRAUD IN OBESITY TREATMENTS

Charges against a physician of fraud and deceit in the practice of medicine were properly dismissed, the New York Court of Appeals ruled, and the Board of Regents' determination that the physician should be censured and reprimanded was properly set aside. The decision affirmed a ruling of an intermediate appellate court.

The physician had specialized for many years in the problems of obese patients and had, on the basis of his experience, observation, study, and research, developed his own method for treating them. The Board had held that he was guilty of fraud and deceit in the practice of medicine because, in applying that method, he prescribed certain medication for patients without giving physical examinations to determine whether a particular patient could take the medication without injury. The court held

that, although his method might be somewhat unorthodox, it did not constitute fraud and deceit in the practice of medicine.

* * *

FREE CHOICE OF PHYSICIAN

Free choice of physician is defined as that degree of freedom in choosing a physician which can be exercised under usual conditions of employment between patients and physicians. The interjection of a third party who has a valid interest, or who intervenes between the physician and the patient does not *per se* cause a contract to be unethical. A third party has a valid interest when, by law or volition, the third party assumes legal responsibility and provides for the cost of medical care and indemnity for occupational disability.

* * *

MISUNDERSTANDINGS TO BE AVOIDED

A physician, in his relationship with a patient who is under the care of another physician, should not give hints relative to the nature and treatment of the patient's disorder; nor should a physician do anything to diminish the trust reposed by the patient in his own physician. In embarrassing situations, or whenever there seems to be a possibility of misunderstanding with a colleague, a physician should seek a personal interview with his fellow.

* * *

SERVICES TO PATIENT OF ANOTHER PHYSICIAN

A physician should not take charge of, or prescribe for another physician's patient during any given illness (except in an emergency) until the other physician has relinquished the case or has been formally dismissed.

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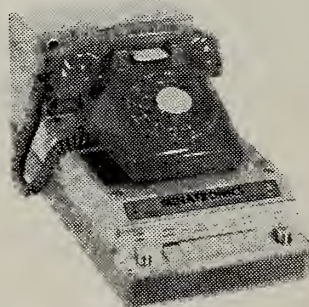
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1907—60TH ANNIVERSARY YEAR—1967

COMMENTARY

From



THE UNIVERSITY OF SOUTH DAKOTA SCHOOL OF MEDICINE

Edited by: Dr. Charles R. Gaush, Publications Committee

CONSULTANTS VISIT

On September 6-7, 1967 Drs. Robert B. Howard, Richard L. Meiling and Cecil L. Wittson, deans of the schools of medicine at Minnesota, Ohio State and Nebraska respectively, visited the School of Medicine in Vermillion at the invitation of Dean Knabe and President Moulton. The purpose of the visit was to provide consultation to the President and Dean concerning plans for the future of the academic program at the South Dakota Medical School. The consultants met with President Moulton, Dean Knabe and other administrative officials as well as the department chairmen. The following is a summary of some of their comments which were presented in their official report.

Clinical and Allied Health Sciences

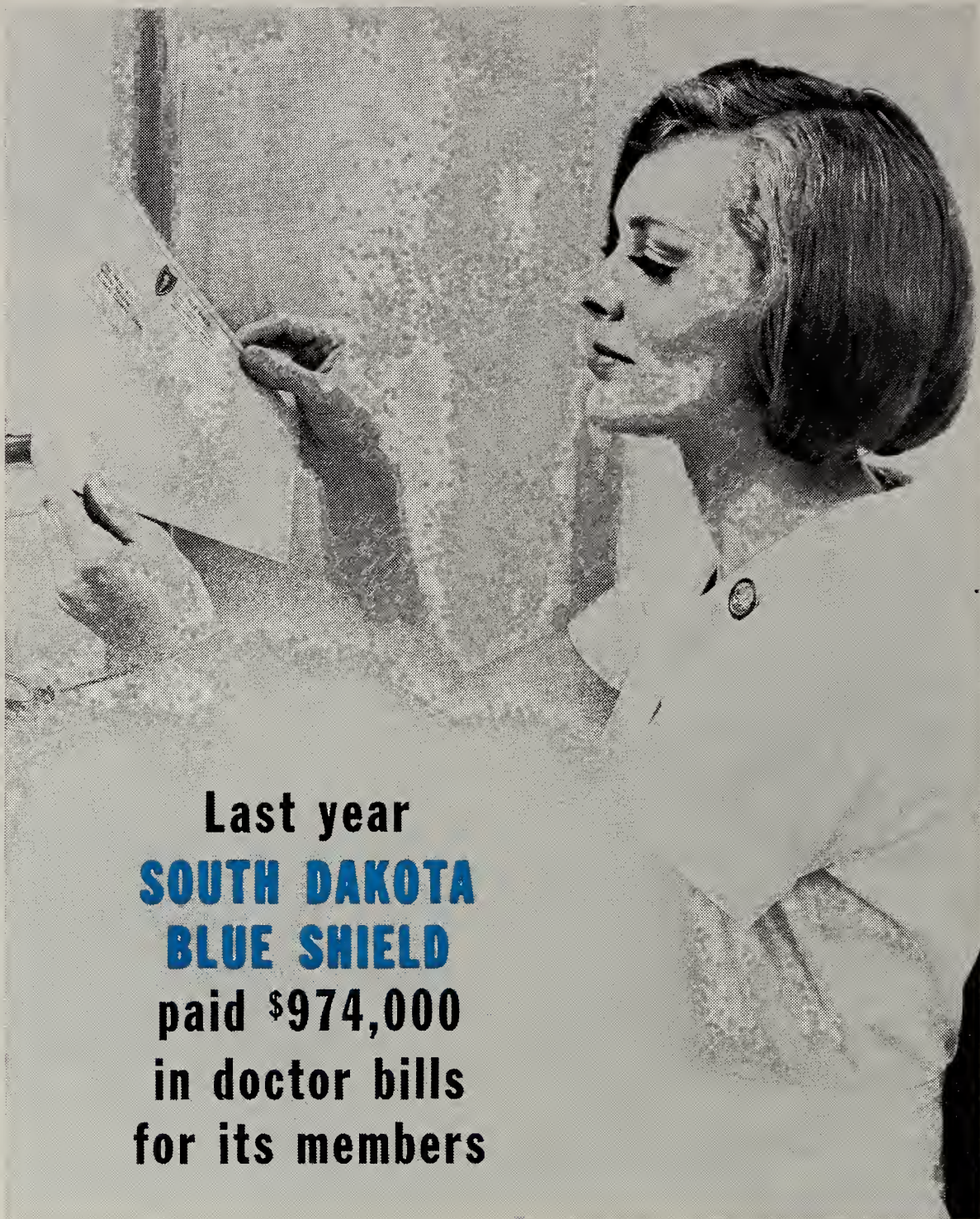
The consultants noted that in addition to the School of Medicine there are health science schools on the campuses of two other state supported schools. They also found no clinical facilities on the University of South Dakota campus and were surprised that some clinical subjects were being taught here rather than being presented in an environment of clinical medicine. Projected into the next several years they thought this lack of integration of basic and clinical sciences may present difficulties in placing USD medical students at the end of their sophomore year. They also stated that the development of programs in allied health sciences without adequate clinical facilities was not very realistic. They said that the state and/or the university should consider the consolidation of all health professions in one administrative unit.

Faculty Salaries

While the consultants noted the commendable increase in faculty salaries during the last two or three years, they pointed out that the salary scale is still not in a competitive range with other medical schools in the great plains states. Also noted was the dearth of fringe benefits for the faculty such as medical and hospital insurance, retirement programs, professional dues, etc. which is definitely not competitive with other institutions. This salary and fringe benefit gap has been pointed out in previous issues of the South Dakota Journal (Aug. 1967, Oct. 1966). The consultants thought this discrepancy would seriously impede the acquisition of new staff necessary for an enlarged student body. In addition, the consultants stated that great care must be exercised to make certain that the basic science faculty is not overloaded with non-medical students and courses for which they are not adequately staffed.

General

The consultants praised the present leadership for the relationship that exists between the medical school, the University, and the State Medical Association. They thought it very wise that strong and mutually supportive relationships exist between these bodies. They also stated that the Dean's staff should be enlarged because the responsibilities associated with the operation of a modern medical school require a sufficient number of individuals who are trained and prepared to accomplish the various roles assigned by the Dean. Specifically recommended for the Dean's staff was an Associate Dean, an administrative assistant and an assistant registrar. The consultants had recommendations concerning animal care facilities, a four-year school and other areas which will be treated separately in future columns.



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All in the medical sciences are cognizant of the fact that a vast number of new drugs have been introduced into our therapeutic armamentarium in recent years. Likewise, many of the older therapeutic agents have been replaced by new, safer, and more efficacious preparations. It is not until a book of the nature of the 26th Ed. of The United States Dispensatory becomes available, however, that there is an awareness of the magnitude of these changes.

Some twelve years have elapsed since the appearance of the voluminous (2139 pp.) 25th Ed. of The United States Dispensatory. In many respects, the 26th Ed. is a completely new book. The alphabetical arrangement of subject matter has been retained. Also retained are the general survey articles covering pharmacological classes of drugs. These are the only similarities. The division of the book into sections specifically devoted to the consideration of "Official," "Non-Official" and "Veterinary" drugs has been discontinued. Also discontinued to a major degree is the consideration of the various formulations of separate drugs, i.e. tablets, syrups, etc. These changes not only minimize duplication of subject matter, but also make possible a reduction in the actual size of the book without sacrifice of content. The most outstanding change, however, is that of emphasis. Previous editions were specifically directed toward the practicing pharmacist. The present edition is directed toward

the physician. For the most part consideration of physical properties of drugs, methods of identification and assay as well as incompatibilities, have been eliminated. Emphasis is placed on the action, the use, and the administration of drugs. Also included are precautions, consideration of untoward effects, and their control.

No consideration of this book would be complete without mention of the excellence of the presentation of the subject matter. All articles, although comprehensive in their coverage, are current, concise and well documented. The subjects covered by the general survey articles have been expanded to include articles on drug dependence, renal therapeutic agents, and drugs used in the control of fertility to mention a few. The survey article on the adrenergic inhibiting agents is especially noteworthy. It includes not only a discussion of **alpha** and **beta** inhibition, but also lists some of the more common agents of each class and their therapeutic application. This book offers a wealth of information on the pharmacology and use of the therapeutic agents presently employed. It is well indexed, listing drugs not only by their generic name but also by their common trade names. It is a book which should serve as a valuable ready reference to the physician and pharmacist as well as to the research worker in allied fields.

Reviewed by

J. N. Spencer, Ph.D.

Dept. of Physiology and Pharmacology
University of South Dakota School of
Medicine,

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* Arthur Osol, Robertson Pratt and Mark D. Altschule. J. B. Lippincott Co. Philadelphia, 26th Ed. 1967, 1277 pp., \$25.

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THE HIDDEN VALUE OF ADS

The importance of medical advertising frequently is not understood by a physician who reads a journal and thinks that the only role the advertiser plays is that of financial support to the publication. He does not realize the detail, planning, research, and preparation which is necessary not only from the manufacturer and agency, but also from the publishers and editors. To be effective, ethical, and legal requires an intimate knowledge of the product and of the needs of the physicians and patients to be served. A great deal of artistic, aesthetic, and advertising know-how goes into each ad; also a great deal of information presented in a desirable, attractive manner, which is available to the physician for the reading.

There are no longer any superficial, trite, or unsupported ads. All are carefully prepared and selected as proper material for this journal; there are no ads that appear in *The American Journal of Orthopedics* which would not be helpful to the physicians reading them. They are a source of vital information regarding new

products, etc. which a manufacturer has produced, tested, and found satisfactory for a physician's use or prescriptions. Each product represents a ratio of about 1:6,000: over 5,000 experiments and failures have been eliminated to present the successful one in the ad.

In addition to providing this source of information to the physician, these advertisers support our journals, which makes it possible for physicians to present their papers, that have been just as carefully prepared and selected; they support our conventions which make it possible for physicians to disseminate information; they support our research and special projects which allow us to advance medicine. They are among the best friends we have and have demonstrated many times that they only want to aid us in the highest, ethical manner.

Therefore the publisher urges that every reader study every ad; for with this habit he will enhance his knowledge gained from the *Journal* by an appreciable, calculated amount; in this issue, 34.8% (Table I). He will be better informed regarding data, technique, and the application of both.

Reprinted from *American Journal of Orthopedics*, May, 1967.

Advertiser	Product	Product Pages			Articles	Product Pages		
		Page No.	Size	% Book		Page No.	Size	% Book
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					Front Cover	1	1	3.85%
Total	8	9		34.8%		17		65.2%

TABLE I. ANALYSIS OF AMER. J. ORTHO., MAY, 1967

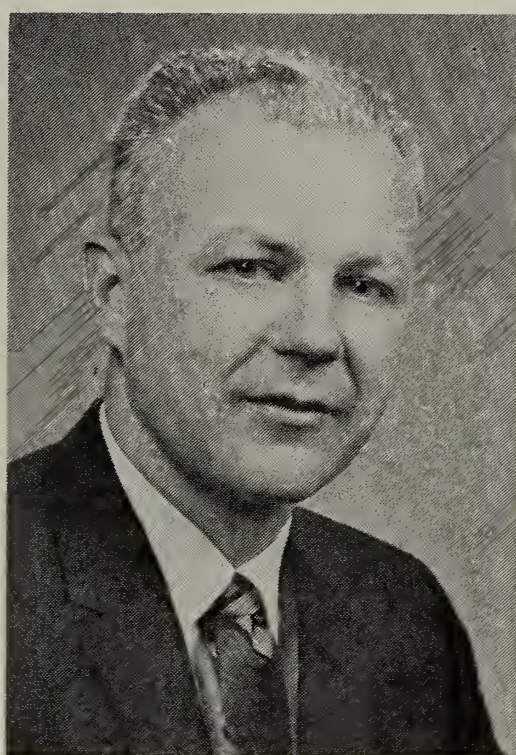
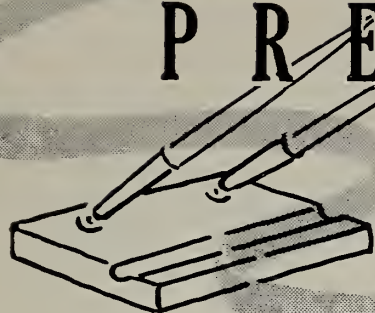
An analysis of this month's Journal is presented in Table I which demonstrates that the publisher, editor, and authors originate 65.2% of this material, whereas, the advertisers are responsible for 34.8%. The physician is much better informed when he reads 100% of the Journal and omits nothing.

BRUCE M. CAMERON, M.D.
Houston, Texas

"COCA-COLA" AND "COKE" ARE REGISTERED TRADE-MARKS WHICH IDENTIFY ONLY THE PRODUCT OF THE COCA-COLA COMPANY.



P R E S I D E N T ' S P A G E



May every happiness and joy be yours at this Christmas Season. And, may the wonderful blessings and beauty of Christmas be with you throughout the year.

JOHN J. STRANSKY, M.D.
President

Season's



Greetings

Dear Doctor:

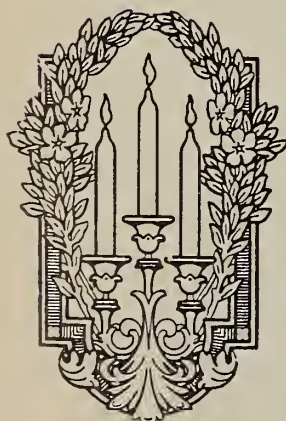
Each Christmas, we of the executive office like to sit back and review the good things that have happened to us during the year.

As always, the best of the "good things" is our relationship with you, our bosses.

So with the Season well in swing let us pause to say "Thank you" and also to wish you the merriest Christmas ever.

For the New Year, we wish you continued success, happiness, and a year of new and gratifying experiences.

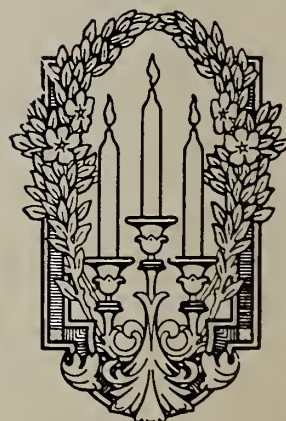
Very sincerely yours,



Your Staff,

South Dakota Medical Association

South Dakota Medical Service, Inc.



This is your

MEDICAL ASSOCIATION

News Notes • Changes • Births • News

Pop's Proverb

Don't try to play the other fellow's game until you know ALL the rules.

James P. Steele, M.D. was recently invited to be one of a small group participating in the 1967 Baconian Dialogues in Hill City, Minnesota. The five items for discussion pertained to the exploration of the major relationships of business and society.

* * *

The Nebraska-South Dakota Regional Medical Program recently included **Charles B. McVay, M.D., Brooks Ranney, M.D. and Ted Sattler, M.D.** as members of the Advisory Committee.

* * *

Bernard Herzog, M.D. attended two training seminars for extension project leaders in Milbank to answer questions arising from the educational program and film shown relating to cancer information.

V. R. Vonburg, M.D., Mitchell, was recently admitted to the International College of Surgeons.

* * *

The Brookings Hospital got the first coronary care system in South Dakota. **Charles Roberts, M.D.,** announced that the system cost \$10,000 and had been planned for the hospital for one and one-half years.

YOUR
CONTRIBUTION
TO THE
SOUTH DAKOTA
MEDICAL SCHOOL
ENDOWMENT
FUND
IS NEEDED

Using x-rays as proof, **R. E. Dean, M.D.** addressed the high school and 7th and 8th grade students of Alpena on the harmful effects of smoking.

* * *

David Buchanan, M.D., will be an instructor for the new Medical Self-Help Course to be held in Huron.

* * *

The annual meeting of the South Dakota Tuberculosis and Respiratory Disease Association was recently held in Watertown. The day-long meeting was highlighted by a luncheon addressed by **Dr. G. Robert Bartron** of Watertown.

* * *

Glenn Kleinsasser, M.D. introduced **Robert Hayes, M.D.** to the Scotland Rotary Club. Dr. Hayes described his two years in Vietnam as a civilian doctor.

* * *

Alan Brevik, M.D., Chairman of the Codington County YGOP Club, received the state organization's annual award for the most outstanding YGOP Club in the state.

E. T. Lietzke, M.D., recently returned from the 19th annual business and scientific session of the American Academy of General Practice, held in Dallas, Texas.

* * *

Representing the South Dakota State Medical Association at the North Central Medical Conference in St. Paul, on Sunday, October 29, were the following doctors: **John J. Stransky, Robert H. Quinn, E. T. Lietzke, E. J. Perry, Mary Sanders, A. P. Reding, Robert H. Hayes, D. A. Gregory**, and **R. A. Buchanan**. Also attending the sessions were staff members **Richard C. Erickson, Robert Johnson**, and **Patty Butler**. **Dr. R. H. Hayes** appeared on the program and discussed "Regional Medical Programs."

* * *

George McIntosh, M.D. who is a Past President of the South Dakota Division of the American Cancer Society and has served on the Board of Directors since 1946 was appointed Chairman of the Nominating Committee this year.

* * *

Alan Brevik, M.D. was the guest speaker for the 11th District L.P.N.'s meeting and spoke on "Care of the Heart Patient In a Coronary Care Unit."

In observance of World Community Day **Robert H. Hayes, M.D.** appeared as guest speaker before local church women at Christ Episcopal Church in Yankton.

* * *

Fifty-six physicians and wives of the First District Medical Society met on October 4, 1967 at the Aberdeen Country Club. State President, **John J. Stransky, M.D.** made his official visitation to the district and during the business meeting he discussed current programs of the State Medical Association. **Richard Erickson** also addressed the group regarding the arrangements for the 1968 annual meeting to be held in Aberdeen.

* * *

H. Russell Brown, M.D. of Watertown moderated a panel discussion on Government medical programs at the recent annual Program Conference of Blue Shield Plans in Washington, D. C.

* * *

Bruce Lushbough, M.D. has presented a film and lecture on childbirth to the University Dames Club at Brookings.

* * *

R. G. Belatti, M.D. addressed the local P.T.A. on "Smoking and Lung Cancer."

At a recent meeting of the Robbinsdale P.T.A. in Rapid City **Francis Kwan, M.D.** spoke on "Common Children's Disease."

* * *

The South Dakota Division Board of Directors of the American Cancer Society announced the election of **Edward G. Huppler, M.D.** as President of this organization.

* * *

On October 25, 1967 twenty-six physicians and their wives from the Twelfth District Medical Society met at the Lantern Inn in Milbank. **John J. Stransky, M.D.**, State President, made his official visitation to the district and addressed the group on the services available from the State Medical Association.

* * *

William A. Bormes, M.D., Aberdeen; **Russell H. Harris, M.D.**, Rapid City; and **H. Phil Gross, M.D.**, Sioux Falls, were inducted into membership in the American College of Surgeons.

* * *

The Medical Clinic in Yankton has moved into its new clinic facilities on West 8th Street. The new clinic is built for a group practice of ten to fourteen doctors.

JOSEPH E. STUDENBERG, M.D.

1907—1967

Dr. J. E. Studenberg, 60, longtime Winner practitioner, died October 9, 1967 at his home. Services for him were held at the Mason Funeral Home at Winner.

Dr. Studenberg was born in Cincinnati, Ohio on January 26, 1907. In 1945, after being discharged from the service he established his medical practice in Winner.

He is survived by his wife and six sons.

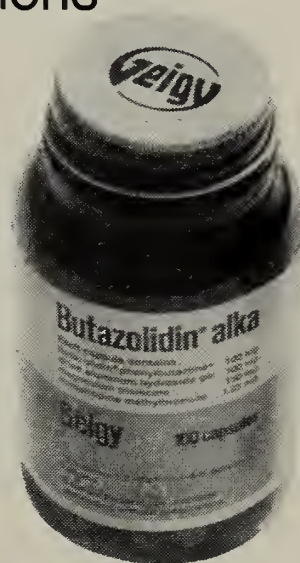
In rheumatoid arthritis, Butazolidin alka needs only a week's trial. If it doesn't work in a week, forget it.

A short trial period may spare patients weeks of discomfort. That's one reason why Butazolidin alka seems a good choice when aspirin fails.

It's not for every patient. Check carefully the Contraindications, Warning, and Precautions shown below.

And adverse reactions may occur. The most common are nausea, edema and rash. Rarely, agranulocytosis has been reported. All adverse reactions are listed below, too.

You'll know quickly if it works. And most of the time, it will.



foliative dermatitis, Stevens-Johnson syndrome, or a generalized allergic reaction similar to serum sickness may occur and require permanent withdrawal of medication. Stomatitis, salivary gland enlargement, vomiting, vertigo and languor may occur. Leukemia and leukemoid reactions have been reported. While not definitely attributable to the drug, a causal relationship cannot be excluded. Thrombocytopenic purpura and aplastic anemia may occur. Confusional states, agitation, headache, blurred vision, optic neuritis and transient hearing loss have been reported, as have hyperglycemia, hepatitis, jaundice, and several cases of anuria and hematuria. With long-term use, reversible thyroid hyperplasia may occur infrequently. Moderate lowering of the red cell count due to hemodilution may occur.

Dosage in Rheumatoid Arthritis: Initial: 3 to 6 capsules or tablets daily in 3 or 4 equal doses. Trial period: 1 week. Maintenance dosage should not exceed 4 capsules or tablets daily; response is often achieved with 1 or 2 capsules or tablets daily. 6509-V(B)R2

For complete details, please see full prescribing information.

Butazolidin[®] alka

Capsules: phenylbutazone, 100 mg.; dried aluminum hydroxide gel, 100 mg.; magnesium trisilicate, 150 mg.; homatropine methylbromide, 1.25 mg.

Also available: Butazolidin[®], phenylbutazone: Tablets of 100 mg.



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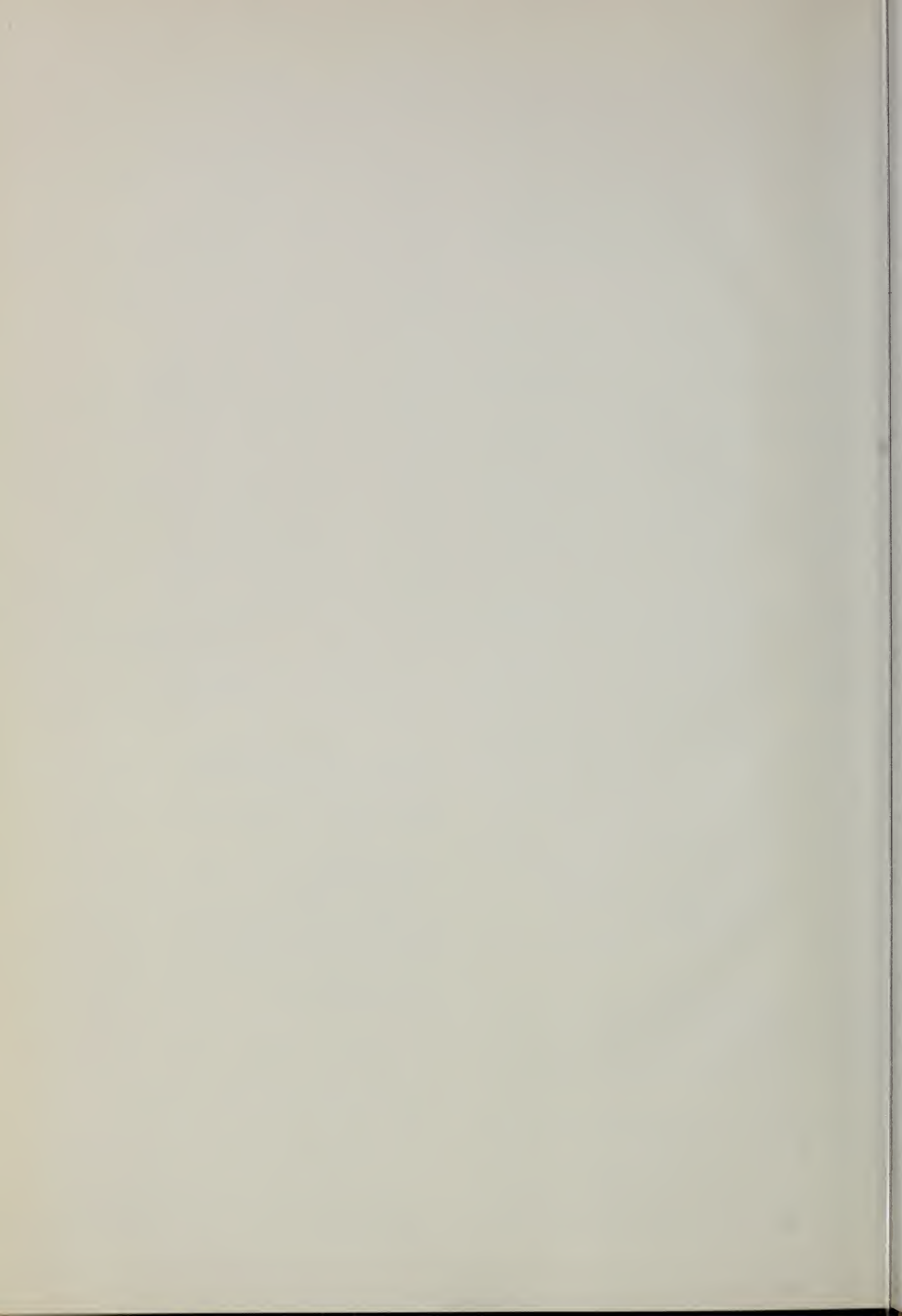
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